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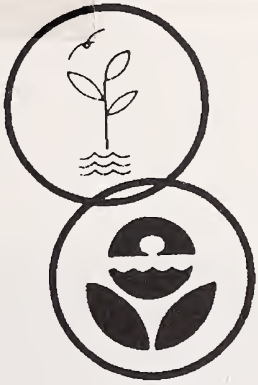
Montana. Solid and
Hazardous Waste
Bureau
Superfund
document



STATE DOCUMENTS COLLECTION

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Superfund document

Silver Bow Creek site, southwestern Montana

Public comment letters received by the State of Montana

during the public comment period on the

Warm Springs Ponds Feasibility Study in 1989

Montana Department of Health and Environmental Sciences
Solid and Hazardous Waste Bureau
Room B201, Cogswell Building
Helena, Montana 59620
(406)444-2821

and

U.S. Environmental Protection Agency
Federal Building
Helena, Montana 59626
(406)449-5414

March 1990

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WRITTEN COMMENTS
Warm Springs Ponds Plan

	Date Received	Date	Name	Address
1.	10-24-89	10-21-89	Carol Alette	1309 Howell Missoula, MT 59802
2.	11-14-89	11-10-89	Nicki L. Leiss	702 Hwy. 10A West #5 Anaconda, MT 59711
3.	11-14-89	11-10-89	Frank Komadince	P.O. Box 835 Anaconda, MT 59711
4.	11-15-89	11-13-89	James McNoy	614 W. 3rd Anaconda, MT 59711
5.	11-15-89	11-14-89	William R. Thomas	2513 Briggs Missoula, MT 59803
6.	No date	11-15-89	Byron E. Dodd	P.O. Box 9379 Missoula, MT 59807
7.	11-17-89	11-16-89	Nicki L. Leiss	702 Hwy. 10A West #5 Anaconda, MT 59711
8.	No date (Rec'd from Governor's Of.)	11-24-89	Charles Haeffner	218 Evergreen Anaconda, MT 59711
9.	12-01-89 (Rec'd from Governor's Of.)	11-22-89	Nicki L. Leiss	702 Hwy. 10A West #5 Anaconda, MT 59711
10.	*12-05-89	12-4-89	Connie Ternes Daniels Co. Commissioner	Courthouse Anaconda, MT 59711
	***Cover letter for following 34 letters:**			
11.	12-05-89	No date	M&M Francis Kanduch	Rt.1, Box 158 Anaconda, MT 59711
12.	12-05-89	11-30-89	Al Varelia	118 S. Dixon Anaconda, MT 59711
13.	12-05-89	11-30-89	Ernest G. WArd & Erika Ward	Opportunity Anaconda, MT 59711
14.	12-05-89	11-30-89	Kathleen G. Francisco	806 Rickards Anaconda, MT 59711

	Date Received	Date	Name	Address
15.	12-05-89	11-30-89	Jack Francisco	806 Rickards Anaconda, MT 59711
16.	12-05-89	No date	Barbara Donahue Mary Ellen Crisler	No address No address
17.	12-05-89	11-30-89	Terry Keyes	301 S. Dixon Anaconda, MT 59711
18.	12-05-89	11-30-89	Phil Kanduch	No address
19.	12-05-89	11-30-89	Nadine Paige	103 N. Dixon Anaconda, MT 59711
20.	12-05-89	11-30-89	Alfred P. Klemann	RFD, Box 71A Anaconda, MT 59711
21.	12-05-89	No date	Florence Ingwerson	No address
22.	12-05-89	No date	Robert Ingwerson	No address
23.	12-05-89	11-30-89	Bob Sestrich	No address
24.	12-05-89	11-30-89	Martha Sestrich	No address
25.	12-05-89	11-30-89	P. J. Duffy	1212 Smith Anaconda, MT 59711
26.	12-05-89	11-30-89	Shirley Colwell & Duane Colwell	No address
27.	12-05-89	No date	M&M Martin Parent	Rt.1 #3 N. Norris Anaconda, MT 59711
28.	12-05-89	11-30-89	Michael McGee	906 Crosby Anaconda, MT 59711
29.	12-05-89	No date	Don Hewitt	No address
30.	12-05-89	No date	John D. Stewart	408 Stewart St. Opportunity Anaconda, MT 59711
31.	12-05-89	11-30-89	David McGee	Box 157 Crosby Anaconda, MT 59711
32.	12-05-89	No date	George J. Niland	No address
33.	12-05-89	No date	Raymond Deakin Larry & Diana Swope	No address No address

	Date Received	Date	Name	Address
34.	12-05-89	No date	Pete Reisanauer, Jr.	Rt.1, Box 1010 Rickards St. Opportunity Anaconda, MT 59711
35.	12-05-89	No date	Peter S. Reisanauer	No address
36.	12-05-89	11-28-89	Robert V. Daniels	203 S. Dixon Anaconda, MT 59711
37.	12-05-89	No date	Gilbert Fischer	1602 Stewart St. Opportunity Anaconda, MT 59711
38.	12-05-89	No date	Stan Preskar	13 S. Dixon Anaconda, MT 59711
39.	12-05-89	11-30-89	M&M Andy Anderwald	309 S. Hauser Anaconda, MT 59711
40.	12-05-89	No date	Judy Minnehan	806 Stuart St. Anaconda, MT 59711
41.	12-05-89	11-30-89	Eugene H. Colucci	113 Stewart St. Opportunity Anaconda, MT 59711
42.	12-05-89	11-30-89	Maxine & Darrell Baker	410 Rickard Rt.1 Anaconda, MT 59711
43.	12-05-89	11-30-89	Millie Mathews	Route #1 Box 211 Opportunity Anaconda, MT 59711
44.	12-05-89	11-30-89	Terry Spear	110 S. Hauser Opportunity Anaconda, MT 59711
45.	12-12-89	12-08-89	Jed Thomas	Sage Resources 645 Plymouth St. Missoula, MT 59801
46.	12-13-89 (Rec'd from Governor's Of.)	11-02-89	Joe H. Roberts	P.O. Box 3045 Butte, MT 59701
47.	12-13-89 (Rec'd from Governor's Of.)	11-12-89	Melvin A. Stokke	1803 Tammany Anaconda, MT 59711

	Date Received	Date	Name	Address
48.	12-13-89 (Rec'd from Governor's Of.)	11-12-89	Robert D. Vine	1402 Cable Road Anaconda, MT 59711
49.	12-13-89 (Rec'd from Governor's Of.)	11-13-89	Nicki L. Leiss	702 Hwy. 10A West #5 Anaconda, MT 59711
50.	12-13-89 (Rec'd from Governor's Of.)	11-16-89	Nicki L. Leiss	702 Hwy. 10A West #5 Anaconda, MT 59711
51.	12-13-89 (Rec'd from Governor's Of.)	11-03-89	F.R. Bennett	First Security Bank P.O. Box 61 Anaconda, MT 59711-0061
52.	12-15-89	12-13-89	Jim Keane	Montana Operating Eng. 3100 Canyon Ferry Rd. East Helena, MT 59635
53.	12-15-89	12-13-89	Board of Co. Commissioners	Co. Courthouse Missoula, MT 59802
54.	12-15-89	No date	Steve Antonioli	P.O. Box 633 Philipsburg, MT 59858
55.	12-15-89	12-13-89	Robin M. Richards	302 Erickson Opportunity Anaconda, MT 59711
56.	12-18-89	12-15-89	Mrs. Mary S. Beer	801 North Third St. Hamilton, MT 59840
57.	12-18-89	12-13-89	Robin M. Richards	302 Erickson Opportunity Anaconda, MT 59711
58.	No date	12-16-89	Serve Myers	#6 S. Hauser Ave. Opportunity Anaconda, MT 59711
59.	12-19-89	No date	Wm. "Blonde" Patrick	1018 S. Wyoming Butte, MT 59701
60.	12-20-89	12-15-89	Robert & Nita Periman	P.O. Box 104 Butte, MT 59703
61.	12-20-89	12-18-89	Jack Atcheson	3210 Ottawa St. Butte, MT 59701

	Date Received	Date	Name	Address
62.	12-21-89	12-19-89	Laurence Siroky	Water Resources Div. DNRC Helena, MT 59620
63.	12-21-89	12-19-89	Jack D. Jones	3014 Irene Street Butte, MT 59701
64.	12-22-89	No date	Jean Peck	Central Business Assn. P.O. Box 563 Sandpoint, Id 83864
65.	12-22-89	12-19-89	Helen Newton	City of Sandpoint City Hall Sandpoint, ID 83864
66.	12-22-89	No date	Ruth Lang	City of Kootenai P.O. Box 566 Kootenai, ID 83848
67.	12-22-89	12-20-89	Joe A. Moreland	USGS 301 S. Park Drawer 10076 Helena, MT 59626-0076
68.	12-27-89	12-23-89	Frank Williams Rivers	2030 Kensington Ave. Missoula, MT 59801
69.	12-27-89	12-20-89	Clark Cowley	City of Clark Fork Clark Fork, ID 83811
70.	12-28-89	12-27-89	James W. Murry	Montana AFL-CIO 110 W. 13th St. P.O. Box 1176 Helena, MT 59624
71.	12-28-89	12-27-89	Samuel A. Worcester	18 Redwood Drive Butte, MT 59701
72.	12-29-89	12-28-89	Kemper M. McMaster	Fish & Wildlife Serv. 301 S. Park P.O. Box 10023 Helena, MT 59626
73.	01-02-90	No date	Louise Colwell	City of Hope P.O. Box 277 Hope, ID 83836
74.	01-02-90	No date	Elona L. Yaryan	East Hope City Council East Hope, ID

	Date Received	Date	Name	Address
75.	01-02-90	12-29-89	Chuck Bauer	Chamber of Commerce P.O. Box 928 Sandpoint, ID 83864
76.	01-03-90	01-02-90	Timothy W. McKeon	Chamber of Commercw 306 E. Park Anaconda, MT 59711
77.	01-04-90	12-20-89	Tony Schoonen	Skyline Sportsmen's Assn., Inc. P.O. Box 173 Butte, MT 59701
78.	No date	12-15-89	Michael Grayson	Dep. Co. Attorney Anaconda-Deer Lodge Courthouse Anaconda, MT 59711
79.	01-09-90	No date	Edgar W. Butler	2210 38th St. Missoula, MT 59801
80.	01-09-90	01-07-90	Peg Patterson	1110 Smith St. Anaconda, MT 59711
81.	01-10-90	01-09-90	James H. Davison	Local Dev. Corp. P.O. Box 842 Anaconda, MT 59711
82.	01-10-90	01-10-90	Kenneth Bender	20200 Smokey Rd. Frenchtown, MT 59834
83.	01-15-90	01-11-90	Stanley G. Glovan	202 N. Dixon Opportunity Anaconda, MT 59711
84.	01-15-90	01-12-90	Robin M. Richards	302 Erickson Opportunity Anaconda, MT 59711
85.	01-15-90	01-12-90	Jack S. Duffield	Opportunity Anaconda, MT 59711
86.	12-05-89	12-12-89	Millie Mathews	Opportunity Anaconda, MT 59711
87.	01-19-90	01-16-90	Frank Bennett Charles Haeffner	Anaconda/D.Lodge Reclamation Advocates P.O. Box 61 Anaconda, MT 59711-0061

	Date Received	Date	Name	Address
88.	01-22-90	01-18-90	Steve K. Loken	P.O. Box 8872 Missoula, MT 59807
89.	01-22-90	01-19-90	Bernard C. Shaw	Star Rt. Box 147-A Bonner, MT 59823
90.	01-22-90	01-19-90	Frederick B. Tossberg	278 Grantsdale Road Hamilton, MT 59840
91.	01-22-90	01-19-90	Wesley W. Wilson	3122 Martinwood Road Missoula, MT 59802
92.	01-22-90	No date	Robert E. Benson	2325 Valley Drive Missoula, MT 59802
93.	01-22-90	01-20-90	Bill Burnett	1520 Garfield Missoula, MT 59801
94.	01-22-90	01-17-90	Paul & Dorothy Gambee	3860 Arizona Butte, MT 59701
95.	01-23-90	01-22-90	Robert J. Greene	Box H Warm Springs, MT 59756
96.	01-23-90	01-21-90	Alice H. Austin Briggs M. Austin	4741 Sundown Rd. Missoula, MT 59801
97.	01-23-90	01-21-90	Kathy Ahlenslager	919 Woodford #1 Missoula, MT 59801
98.	01-23-90	01-21-90	J. George Hummel	6518 Rattlesnake Missoula, MT 59802
99.	01-23-90	01-21-90	Mark S. Connell	4605 Arnica Missoula, MT 59803
100.	01-24-90	01-23-90	John Dilley (w/attached news-paper article)	Box 7752 Missoula, MT 59807-7752
101.	01-24-90	01-10-90	Barry Dutton, Chm. Missoula Water Quality Advisory Group	City-Co. Health Dept. 301 W. Alder Missoula, MT 59801
102.	01-25-90	01-22-90	John Roskelley	E. 16641 Foothills Rd. Spokane, WA 99207

	Date Received	Date	Name	Address
103.	01-25-90	01-23-90	John L. Wozniak	2000 Russell P.O. Box 4207 Missoula, MT 59806
104.	01-25-90	01-24-90	Peter Forsythe	880 Lobby Circle Billings, MT 59105
105.	01-25-90	12-13-89	Robin M. Richards	302 Erickson Opportunity Anaconda, MT 59711
106.	01-25-90	01-23-90	Richard L. Smith Edie G. Smith	Missoula Physical Therapy Center 715 Kensington Missoula, MT 59801
107.	01-26-90	01-23-90	Jodie Canfield	P.O. Box 278 Philipsburg, MT 59858
108.	01-26-90	01-19-90	Bill McDonald	City-Co. Board of Health City-Co. Health Dept. 301 W. Alder Missoula, MT 59802
109.	01-29-90	01-23-90	Melissa L. Miller Mark L. Story	P.O. Box 99 Hope, Idaho 83836
110.	No date	01-25-90	Robert V. Daniels	203 S. Dixon Anaconda, MT 59711
111.	01-29-90	No date	Ron Pierce	103 Stewart St. Opportunity Anaconda, MT 59711
112.	01-29-90	01-26-90	S.Daryl Parker Sherrie B. Parker	Smiling Gulch Ranch Lincoln, MT 59639
113.	01-29-90	01-26-90	Gary Murphy	Mile High Cons. District P.O. Box D 405 W. Legion Ave. Whitehall, MT 59759
114.	01-29-90	01-25-90	John Langstaff	10800 Grant Creek Road Missoula, MT 59802
115.	01-29-90	01-26-90	John Fraley, Pres.	American Fisheries Soc. P.O. Box 67 Kalispell, MT 59903

	Date Received	Date	Name	Address
116.	01-29-90	01-23-90	James D. Greene	1917 Missoula Ave. Missoula, MT 59802
117.	01-30-90	No date	Cody Brooks	10155 Grant Creek Rd. Missoula, MT 59802
118.	01-30-90	No date	Richard A. Faust	Bitterroot-Mission Group Sierra Club P.O. Box 7315 Missoula, MT 59807
119.	01-30-90	01-24-90	David Kebler	P.O. Box 2037 Missoula, MT 59806
120.	01-30-90	01-26-90	James E. Daub	10795 Oral Zumwalt Way Missoula, MT 59803
121.	01-30-90	01-26-90	Douglas Webber, M.D.	500 West Broadway St. Patrick Hospital Missoula, MT 59802
122.	01-30-90	01-27-90	Mary Vant Hull	416 E. Story Bozeman, MT 59715
123.	01-30-90	01-27-90	E. Terrill Nobles	1321 Eastside Highway Corvallis, MT 59828
124.	01-30-90	01-29-90	Jerry Gless	1611 6th St. Walkerville, MT 59701
125.	01-30-90	01-29-90	Judy Evans	307 W. 2nd #28 Libby, MT 59923
126.	01-30-90	01-29-90	Carla J. Krause Admin. Secretary	City of Missoula Public Works Dept. 201 W. Spruce Missoula, MT 59802-4297
127.	01-31-90	01-26-90	Brian Jameson	116 North Avenue E. Missoula, MT 59801
128.	01-31-90	01-25-90	Warren A. Wanamaker	Bonner-Boundary Board of Realtors P.O. Box 1416 Sandpoint, ID 83864
129.	01-31-90	01-29-90	William B. Macgregor	917 West Broadway Butte, MT 59701

	Date Received	Date	Name	Address
130.	01-31-90	01-26-90	Chris Marchion	2105 Garfield Anaconda, MT 59711
131.	01-31-90	01-29-90	Frank Williams Rives	2030 Kensignton Ave. Missoula, MT 59801
132.	01-31-90	01-24-90	Dick Baroni	512 North Sixth St. Sandpoint, ID 83864
133.	01-31-90	No date	Mary Leonard	934 W. Pine Missoula, MT 59802
134.	01-31-90	01-31-90	Paul S. Roos	Trout Unlimited P.O. Box 878 Lincoln, MT 59639
135.	01-31-90	01-30-90	Rich Day	Montana Wildlife Fed. P.O. Box 6537 Bozeman, MT 59715
136.	01-31-90	No date	David C. Atkins	P.O. Box 1070 Plains, MT 59859
137.	01-31-90	01-29-90	John Duffield	Bioeconomics Assoc. 3699 Larch Camp Road Missoula, MT 59803
138.	01-31-90	01-31-90	Patrick J. Graham	MT Dept. of Fish, Wildlife and Parks 1420 East Sixth Ave. Helena, MT 59620
139.	01-31-90	01-29-90	Tim Sullivan	1051 West Mercury Butte, MT 59701
140.	01-31-90	01-30-90	Lynda A. Saul	419 Adams Helena, MT 59601
141.	01-31-90	01-30-90	Robert L. Dent	ARCO Coal Co. 555 Seventeenth St. Denver, CO 80202

1) Review comments on Silver Bow Creek Investigation Feasibility Study for the Warm Springs Ponds Operable Unit;

2) ARCO Plan Alternative 3A, Feasibility Level Design for Remediation of the Warm Springs Ponds Operable Unit; and

3) ARCO's responses to public comments.

	Date Received	Date	Name	Address
142.	02-01-90	01-31-90	Janet H. Ellis	Montana Audubon Council P.O. Box 595 Helena, MT 59624
143.	02-01-90	No date	Arlene Dierker	853 Mobelle Moscow, ID 83843
144.	02-01-90	01-30-90	Denise Moldroski Mott	Mineral Co. Health Dept. P.O. Box 396 Superior, MT 59872
145.	02-01-90	01-31-90	Kathleen McLaughlin	21055 River Road Missoula, MT 59801
146.	02-01-90	01-31-90	Chris Kaufmann	MT Environmental Information Center P.O. Box 1184 Helena, MT 59624
147.	02-01-90	01-30-90	Scott Luchessa	University of Montana Environmental Studies Missoula, MT 59812
148.	02-01-90	No date	Dick Solum	1146 West Diamond Butte, MT 59701
149.	02-01-90	01-27-90	Ruth Watkins	Clark Fork Coalition P.O. Box 1096 Sandpoint, ID 83864
150.	02-01-90	01-29-90	Gary Baxter	P.O. Box 8832 Missoula, MT 59807
151.	02-01-90	01-31-90	Peter Nielsen	Clark Fork Coalition P.O. Box 7593 Missoula, MT 59807
152.	02-01-90	01-31-90	Tom France	National Wildlife Fed. 240 N. Higgins Missoula, MT 59802
153.	02-01-90	01-31-90	Land M. Lindbergh	Star Route, Box 337 Greenough, MT 59836
154.	02-01-90	01-31-90	James J. O'Toole	The Environmental Consultant Group P.O. Box 198 Alberton, MT 59820

	Date Received	Date	Name	Address
155.	02-02-90	01-20-90	Sherri Johnson	712 S. Pickard Norman, OK 73069
156.	02-02-90	01-24-90	Dan Ueland	Resource, Conservation & Development, Inc. 305 W. Mercury Suite 211 Butte, MT 59701
157.	02-02-90	No date	Kim J. Reineking	Trout Unlimited P.O. Box 7316 Missoula, MT 59807
158.	02-02-90	01-23-90	Melvin A. Stokke	1803 Tammany Anaconda, MT 59711
159.	02-05-90	01-30-90	Don C. Holland Rebecca Holland	9345 Colburn-Culner Sandpoint, ID 83864
160.	02-06-90	No date	D.R. Stoecker	Georgetown Lake Anaconda, MT 59711
161.	02-05-90	02-02-90	Claude Rosenberg, Jr.	RCM Capital Management Four Embarcadero Center Suite 2900 San Francisco, CA 94111
162.	02-27-90	02-21-90	Judith Carnes	409 Cedar Street Anaconda, MT 59711

October 21, 1989

Kathy DeMarinis, State Project Manager
Dept. Health & Env. Sciences
Cogswell Building
Helena, MT 59620

RECEIVED
OCT 24 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Ms. DeMarinis:

I'm writing to urge you and your agency to vigorously pursue clean-up of the Clark Fork River. The work is so far proceeding at a snail's pace, while the Clark Fork's water quality and fisheries suffer. Please work to implement both short-term mitigations measures that will minimize fish kills and long-term solutions that will lead to the complete, permanent clean-up of the river.

Thank you.

Sincerely,

Carol Alette

Carol Alette
1309 Howell
Missoula, MT 59802

Site
File # 5-05-05-15
Confidential: Yes ____ No X
Admin. Record: Yes X No ____
Key Words/Comments: ____

November 10, 1989
Friday

To: Montana Department of Health & Environmental Sciences

I attended the hearing last night at the Metcalf Center in which the MDHES presented its proposal for cleaning up the Warm Springs Ponds. Your "proposal" sounded fine until you came to the part about constructing a new settling basin upstream from the Warm Springs Ponds. Don't you realize this would create more contaminated land! I am opposed to this idea! Remember your job is to help clean-up the Silver Bow Creek Superfund area and not to create more contaminated land.

Thank You,

Nicki L. Leiss
702 Hwy. 10A West #5
Anaconda, Montana
59711

RECEIVED
NOV 14 1989
MONTANA DEPARTMENT OF HEALTH
& ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

5-05-05-15 (3)

M.D.H & E.S.
Solid & Hazardous Waste Bureau
Room B 201, Cogswell Bldg.
Helena, Mt. 59601-9987

11/10/1989

Site
File #
Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

Attn: Jamie Stiles

Gentlemen, Re: Public Meeting - 10/9/89 - Metcalf Center - Anaconda, Mt.

I would like a point by point response to the following questions @ your earliest convienience

1. Is the Arsenic in the Smelter Hill Five Area stored temporarily or permanently?

2. The 18 Million $ in the Bonds - Is this figured by the volume of the water/sediment Chemical toxic materials contained therein?

3. I formally request - insist that Anaconda/Deer Lodge County be included in the Official Public meetings on Dec. 89. Yes or No? Our area contains most of the deleterious waste materials in your Silverbow Creek Superfund Site. If we are not to be included, why not?

4. It was stated that some fish are living in the pond(s). How come fish kills down stream?

(Cover)

5. The proposed 1000 acre-foot upstream settling basin, is the same as the new pond being proposed South of Hi-way 1?

6. Would you please rough sketch on the 2nd page (like sheet) "Silver Bow Creek Superfund Site Agenda pkg - Public Mtg - W. Side" of the proposed location of the new pond showing the Inlet & Outlet channels? Send me a copy?

Sincerely,

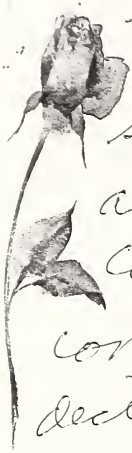
Frank J. Kosmalance
PO Box 825
Anaconda, Mt. 59711

File # 5-05-05-15
Confidential Yes ____ No ____
Admin. Rec'd: Yes ____ No ____
Key Words/Comments: Dear Jane + Mike + Kathleen —

11-13-89 (4)

I attended the meeting at the Metcalf Center in regards to the proposed plan for the Warm Springs Ponds.

My question about the proposal is in regard to the continued use of these Ponds. Has any consideration been given to treating the pollution of Silver Bow Creek at it's source? I am not that learned to know if that idea has any merit practically but morally and fairly



it seems to me that is where the solution should be made, not at Warm Springs. I can understand the convenience and cost wise decision for the Anaconda Co. to build the ponds where they are, but is it necessary for your office to continue on with this unfairness to Deer Lodge Co. and its residents?

Butte + Silver Bow county reap all the benefits of the taxes collected and employment, Deer Lodge County no longer

recieving a fair share.
Why should we be the
continued dumping
ground for another
county's waste? to
continue to have 30 miles
of polluted river from
it's source to Warm
Springs does not seem to
me to be cleaning up our
environment. Why not have
30 miles of clean water?
your plan will have slum
ponds all over the Bear Forge
Valley and increase the
likelihood of a major disaster.

Sincerely
James McKay
614 W. 3rd
Oxnard

Site_____
File #_____
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

November 14, 1989

Kathleen DeMarinis, Project Manager
Montana Dept. of Health and Environmental Sciences
Room B201, Cogswell Building
Helena, MT 59620

Dear Ms. DeMarinis:

Last evening I attended the informational meeting in Missoula on the Warm Springs Ponds Proposed Plan. Although I am pleased that much professional thought is being given to a resolution of this phase of the Silver Bow Creek Superfund Site, I'll admit I was more than a little disturbed to learn that the preferred alternative considers a design for a probable maximum flood of only one hundred years and that the proposed settling basin above Pond 3 would only handle about a ten year flood. Since those extremely toxic wastes will apparently remain in the floodplain, I feel that the proposal to design a scheme to accommodate merely a 100-year flood poses an unacceptable risk to the Clark Fork system.

Sincerely,

William R. Thomas

William R. Thomas
2513 Briggs
Missoula, MT 59803

RECEIVED
NOV 15 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

cc: Clark Fork Coalition

ENVIRO-METAL PROCESS
P.O. Box 937
Missoula, Montana 59807
(406) 542-0343

Site_____
File #_____
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

November 15, 1989

Kathleen DeMarinis, Project Manager
Department of Health & Environmental Sciences
Helena, Montana 59620

Warm Springs Ponds

Dear Ms. DeMarinis:

I have reviewed the proposed plan for clean-up of the Warm Springs ponds, and the materials handed out at the November 13, 1989, public meeting in Missoula. Please accept this letter as a written comment on the technologies and process options which you have considered for the Warm Springs ponds, and to make you aware of a technological alternative which you may not have considered.

Some of the key criteria you have used for evaluating the Warm Springs ponds clean-up are the overall protection of human health, the permanence of the solution, and the reduction of toxicity of the tailings and contaminated soils. With respect to the Preferred Alternative, serious public concerns exist regarding each of these criteria, because the contaminated materials would be allowed to remain in the flood plain that feeds into the Clark Fork River system.

Our company has developed an environmentally-sound refining process which we believe could extract essentially all of the contaminants in the pond sediments and/or the tailings. The chemical-based process is designed to operate almost entirely as a closed system, maximizing efficiency as well as minimizing environmental concerns. Technologically, EMPI's process is a novel combination of proven chemical and metallurgical processes using mainly conventional equipment components. Although our efforts over the past year have focused on obtaining financing to construct a pilot-scale ore-processing facility in western Montana, we are confident that the process

can be readily applied to removing the arsenic, copper, and heavy metals from the Warm Springs pond materials.

Rather than attempting to isolate the existing contamination from the surface and groundwater, our treatment process would result in clean sand and salable elemental metals. We recognize that processing the tailings and contaminated soils may be more expensive on a unit basis than other options you have considered. However, removal of the contaminants using our process may prove to be cost effective for the materials with the highest concentrations of toxicity. Also, pre-concentrating the materials, e.g., removing sand and rock by physical methods prior to refining, would also enhance the cost-effectiveness of this alternative. Finally, transportation costs could be minimized by constructing a processing facility near the ponds. In this regard, our company has already secured from Anaconda Local Development Corporation a convenient site and building in the Arbiter Plant Minor Subdivision.

Some combination of the cost mitigation measures outlined above, along with our capability of removing essentially all of the contaminants, might very well afford the type of safe and permanent remedy that cannot be achieved under the Preferred Alternative. If you are interested in further evaluating this possibility, we have prepared a 20-minute video tape which demonstrates our process on a laboratory scale. I would also appreciate your making this information available to the local EPA officials, in the event that the EPA is interested in evaluating our process as part of a longer-term development project.

We look forward to receiving your response to this letter, and to further discussions on the feasibility of utilizing our process. I hope that our company can contribute to this important Superfund project.

Very truly yours,

Byron E. Dodd

Byron E. Dodd
President

5-05-05-15 (7)

RECEIVED
NOV 17 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

November 16, 1989

Site
File #
Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

To: Kathleen De Marinis
C/o Montana Department of Health and Environmental Sciences
Cogswell Building Building
Helena, Montana
59620

Your plan for cleaning-up the Warm Springs Ponds is not logical in this particular part of Montana. First if you construct an 8,000 acre-foot new pond, I do believe that you must anticipate some great body of water (Example: Let's say the Atlantic Ocean) to flood us out.

Second if you construct a 2,000 acre-foot pond in addition to those already existing then you would be contaminating productive land.

I believe it would be in the best interest of the state of Montana to still keep looking for another way to clean-up the Warm Springs Ponds area.

As a Montanan citizen and a resident of Anaconda/Deerlodge County, I say no to your plan !!!
No Way !! No How !!

Sincerely,
Vicki Reiss - Anaconda Montana

ANACONDA-DEER LODGE RECLAMATION ADVOCATES

218 Evergreen
Anaconda, MT 59711

November 24, 1989

To: Governor Stan Stephens
State Capitol
Helena, MT 59620

From: Charles Haeffner
218 Evergreen
Anaconda, MT 59711

Re: Warm Springs Pond Proposed Plan

After reviewing the states proposed plan, we do not think that it will be sufficent or a workable plan for this area. We feel that taking good farm land and turning into a big waste pond area is not the way to go for several reasons: we would have another unusable acreage in this area and the time in acquiring this land would go beyond our needs. We need action NOW. This would also make it tough on the fisheries that are presently in the creek.

We do believe that the Arco Plan for the ponds is a much more effective plan in which could be started at an earlier date. We wish for you to keep an open mind regarding the time element. With your administration and your staff members we feel that this job can be started and finished. We look forward to working with you and the members of your staff.

Sincerely.

Charles Haeffner

/ch
Copy:
Dick Hafer
Clark Fork Basin Coordinator
Bill Williams
Arco

Nov. 22, 1989 (9)

To: Gov. Stan Stephens
Room 204
Capitol Station
Helena, Montana 59620

I propose that a repository be built on Smelter Hill in Anaconda. This repository would be used to store arsenic and heavy metals to prevent any danger to life or contamination of other land.

The repository would also keep the contaminates from water in the surrounding area.

I hope that you will give my proposal very serious thought!

Sincerely,

Nicki L. Leiss
702 Hwy. 10A West #5
Anaconda, Montana
59711

RECEIVED
DEC 1 1989
DEPARTMENT OF HEALTH
ENVIRONMENTAL SCIENCES
HAZARDOUS WASTE BUREAU

ANACONDA-DEER LODGE COUNTY
Courthouse - 800 South Main
Anaconda, Montana 59711
Telephone (406) 563-8421

December 4, 1989

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Ms. Janie Stiles
Department of Health & Environmental Sciences
State of Montana
Cogswell Building
Helena, Montana 59620

Re: Warm Springs Ponds Proposed Plan

Dear Janie:

The Opportunity Concerned Citizens have formulated to express our views concerning any cleanup activities within our community.

Enclosed you will find more than 30 letters expressing major concerns with the State's proposed plan on the Warm Springs Ponds. Please add these letters to your record of public comment.

To summarize our major concerns:

1. What effects will a new settling pond, located upstream from Opportunity, have on groundwater?

2. What kind of economic impacts can the residents expect in terms of lost property values and lost county tax base?

We believe that the State's plan falls far short of addressing many major questions. Before the proposed alternative goes any further, we suggest that the effects of the fourth proposed pond on our community and groundwater be completely addressed.

Sincerely,

Connie Ternes Daniels
Connie Ternes Daniels
Commissioner, District No. 4

for Opportunity Concerned Citizens

CD:cg

Enc.

(11)

Janie Stiles,

We do not see any reason to put a pond on the South side when there is a useable one on the north side. We are also concerned about our water.

What will it do to the value of the property here in Opportunity if we have two ponds here?

Why should we pay $6.2 million to build a pond, when Arco will do this for $2.4 million?

Do you liability insurance to protect us + also what will this do to the resale value of the property here in Opportunity?

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Mr. + Mrs. Francis Kinderen
Rte 1 - Box 158
Anaconda, Mt. 59711
Phone
563-3255

(15)

Attn:
Jane Stiles

11/30/89

As a resident of Opportunity, I am concerned about the decisions and proposals that are being made on reclamation in our area. I think that the residents input and education here should be more considered before actions and work is started.

Albert Varelia

Al Varelia
118 So Dixon
Anaconda, Mt.

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(13)

Opportunity, Montana
Nov 30, 1989

Dear Janie Stiles,

Writing to you, because my husband, and I are concerned about, what was discussed at the meeting we both attended, here at the Opportunity Community Club House. Nov 30 - 1989.

We are greatly concerned about the State Plan regarding the Warm Springs Ponds. And what effect ~~it~~ will the proposed settling Pond, have on our ground water, and property value.

Thanking you, for hearing our concerns.

Respectfully yours,
Ernest L Ward
Erika Ward

RECEIVED
DEC 5 1989
...AS HEALTH

(14)

806 Richards
Anaconda Mt.
Nov. 30, 1989

Ms Jami Stiles,

I am writing to inform you that I'm very opposed to the State of Montana's plan for the clean up of the Clark Fork River - mainly the settling pond proposal south of Opportunity.

I am concerned about what it will do to the water table here & the quality of our well water. When this plan back fires who is going to take the responsibility.

It will definetely lower the value of our property.

I am also upset over the fact that - we (the people of Opportunity) we never contacted or told about this proposal -

Kathleen C Francois

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(15)

806 Rickards
Anaconda Mt.
Nov. 30, 1989

Ms Jane Stiles

I ana writing to inform you that I am opposed to the State of Montana's plans for the clean up of the Clark Fork River mainly the proposed settling pond south of Opportunity.

I am concerned about what it will do to the water table here and the quality of our well water

It will certainly lower the value of our property

Respectfully Yours
Jack Francisco

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jane Stiles

As a concerned citizen of Opportunity I feel that people should be first before another contaminated area in our back yard. I feel we have plenty of ponds around this area and it's a shame.

Barbara Donahue
Mary Ellen Carlson

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(17)

Julie St. Cer
Montana Dept. of Health &
Environmental Science
Room B 201 Cogswell Bldg
Helena Mont. 59620

11-30-89

To whom it may concern,

I am very much against the proposed reclamation project being implemented without any input from the citizens of the affected community of Opportunity, or consideration of the effect on our water, community + life as we have it now.

Thank you

Terry Sayes
301 S. Dixon
Phone 797-3296

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(18)

Nov 31-1989

Dear Jane Stiles

I live in Cypress a pond South of us will Screened us with Ponds Will Devaluat all properties in a quarter

Arco has a better Plan. To use old Ponds

Phil Vandruch

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(19)

Nov. 30, 1989

Janie Stiles:

I am writing this letter as a concerned citizen, and also as a resident of Opportunity. I am very deeply concerned about the proposed settling pond that is going to be going in down here. I am wondering what it will do to the value of my property and also about our wells and will this settling contaminate our water.

Nadine Paige
103 N. Ligon
Anaconda, Mont.
59711

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(30)

November 30, 1989

Dear Jani Stiles,

As a property owner in Opportunity I'm deeply concern about the property State plan to build an additional settling plan in the Opportunity Area. My concern are focused in the area of Property Value, Public Safty for the People of Opportunity and the long term effect on the Water Systems of Opportunity.

I would like to see a Public Meeting with the People of opportunity to explain the Plan and ~~the~~ be informed as to who will be liable for any damages to the People of our Community.

Thank you,

Alfred R. Klemmer

P.O.P. Box 71 H

Anaconda, Montana

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Janie Stiles

I am a concerned citizens of Opportunity. And is very much against putting a holding pond South of Opp. South East of Opportunity. As it will effect our ground water and drinking water and our property.

Sincerly Yours.
Florence Ingverson

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jane Stiles

I am a concerned citizen of Opportunity who is not in favor of putting a holding pond across the highway from Opportunity. Because what would happen to our drinking water and ~~not~~ value of our property. I am in favor of Arco plan

Robert Ingwerson

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DEC 5 1989

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(23)

11-30-89

Dear Sir

As a concerned resident of Opportunity I would like to be considered in your plans for our area. I am worried about your plan for a settling pond in our back yard. We have enough contaminated ground surrounding us now without adding more.

Bob Lastick

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

(24)

11/30/89

Janie Stiles
Montana State Dept. of Health & Environmental Science
Cogswell Building
Helena, Mt.

Dear Ms. Stiles,

I am writing to express my concerns pertaining to the proposed setting pond south of Opportunity.

I feel this will not only depreciate the value of our property, but also cause a potential contamination problem to our water.

We have lost our lease on our community pastures, we have contamination on three sides of us & if your proposed pond goes through, it does not leave much of a future for Opportunity!

Please reconsider your proposal & think about the problems that you are causing, to us residents.

We deserve to at least be left with some of the good things that make always made Opportunity ~~[illegible]~~ a place that people wanted to reside in & others wanting to move to.

I hope that you will think of us before any drastic decision is made.

Sincerely,
Martha Gestrick

(95)

Carol Stiles
Mont. Dept. of Health
Env. Sci.
Room B 201
Cogswell Bld - 11-30-89
Helena Mt. 59620

To whom it may Concern

Dear Sir.

I am concerned about the proposal to construct a new solution pond South of Opportunity, + also the removal of top soil from the pasture land south + north of opportunity for reclamation work.

I am very much opposed to this + hope you can help us in this matter.

Thank you.

P. J. Duffy
1212 Smith
Opportunity, Mt
59711

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Nov. 30, 1989

Jaime Stiles,

We are writing as Concerned Citizens of Opportunity as to what is going on about our Cow & Horse pasture & the settling pond the state is proposing. We do not feel that the pond will be beneficial in any way to our property value, our well water, etc. The states plan is 60 million - Arco's 20 million - Quite a difference when Arco's plan sounds like it will take care of the problem sufficiently. We do not like the idea of the possible use of the pastures as reclamation of good productive land. We certainly would like to keep the use for grazing.

We would like to be kept informed on all plans.

Sincerely,
Shirley Colwell
Duane M Colwell

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janie Stiles
Helena, Montana

Dear Janie Stiles,

We are residents and property owners in Opportunity, Montana. We are very concerned about the Pick-U building a settling pond in our backyard. There are so many unanswered questions. What about contamination of our wells, our gardens etc. I have heard so much about concern for the fish + fowl, how about we humans. Maybe we don't count. What about our property values ???

Sincerely
Mr. + Mrs. Morton Sarent
Rt 1 # 3 N. Morris
Anaconda, Montana 59711

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear
Tonia Stiles,

Nov 30 1989
Michael M. Gee
906 Crosby
Anaconda Mt

As a resident of Opportunity I am very concerned about the States peposal to create a new ~~settling~~ pond so near our community as to the long and short term effect on our lives and Property. I am not a Geologist but with all the work your plan is it still can't help but be very adverse on the Water table and our Wells. There are numerous unanswerd questions.

Please send arabte infomation on ehy proposed plans

Thank You
Mich. M. Gee
906 Crosby
Anaconda. Mt.
59711

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

~~Dear Sirs~~ Jane Stiles

I am concerned about your plans for the clean up of the Warm Spring ponds. I personaly don't want a road up Strunk for oh~~n~~ more home it would polute our wells ~~&~~ its absolutely on called for. I think the Negro population is more important than the fish.

Thank you

Don & Lewis H.

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DEC 5 1989

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

TO: JAMIE STILES - CO-ORDINATOR.

I definitely feel that, if a new settling ~~Pond~~ Pond is constructed as ~~proposed~~ it will cause property values to go down in the Opportunity area. Also it may cause contamination to our water wells. Therefore I am against a new ~~pond~~ pond being constructed

John D Stewart
JOHN D STEWART
408 STEWART ST
OPPORTUNITY
797-3976

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Nov 30 1989.

Dear Janie Stiles

I am an opponent to the proposed landfill. And I plan on living here the rest of my life I do not want a dump pond in our back yard. The first reason is what damage is it going to do. it will ruin our land, our drinking water. Second reason if one do sell, no one would want to buy a house that has contained land on it.

Thank you for taking your time and consern.

David Fee

Box 157 Crosby
Arlee Mont 59211

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janie Stiles
c/o Mont. Dept of Health & Environ. Sciences
Room B201
Helena, Mont 59620

Dear Mrs Stiles,

I George Niland am apposed to the Proposal to put a new setting Pond South of Highway Mt 1. I am worried about our Drinking water and also our property value. I am a father of 3 and I would like to know for sure that my children and their children can be sure that they will have a healthy life here in opportunity. I would like to see the State, or ARCO to leave well enough alone

Thanks
George J. Niland

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jamie Zeiler
Groundwater Coordinator

We would like to object to the process of getting permit requests by publication. We feel that we would be more adequately informed by the Federal Government Register.

Raymond Deakins

Larry & Leona Lukpe

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Montana Dept of
Health & Environmental
Science
Room B201
Cogswell Bldg
Helena mt 59620
Janie Stiles

To Whom it may concern:

I feel as a Resident of Opportunity for over 30 Years. that putting another Holding pond on the south side of Opportunity, instead of fixing the already exzesting ponds at Warmspring would not be a good Idea for several reasons. 1- what about are Drinking water 2- land Value. We already have one pond on the north side Mill creek is ~~sed~~ said to be contamanated whats next. also the States plan is 60 mil arco's plan 20 mil thus saving 40 mil I myself would think that fixing the existing ponds for 40 mil would make a lot more sence and if the state screws up and the pond does not work how is reponable the state. One more thing no one from eather the State or Arco has called, stop by, written a letter to ask my opion of said ponds.

Pete Reisenauer Jr
Rt 1 Box 1010 Richards st
Opportunity mt
59711

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
ID & HAZARDOUS WASTE BUREAU

Opportunity Volunteer Fire Department
RFD No. 1, Fire Hall
ANACONDA -:- MONTANA

Dear Janie Stiles,

This letter is concerning the state's plan on building a new pond south of Oppor. I do not feel we need another setting pond near Oppor. The Arco plan of rebuilding the existing ponds seems sufficient.

I also feel this might affect the ground water in Opportunity not to mention the drastic effect it would have on property values. I think when the state made this plan, they forgot to consider the wishes of Oppor residents.

Peter S Tresemer

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

11/28/89

Dear Janie Stiles

As a resident of Opportunity and a member of the Opportunity concerned citizens group, I would like to voice my concern about proposed decisions and plans for reclamation that are being made without the input of the residents here in Opportunity.

In particular I am opposed to the proposed 2000 acre ponds south of Opportunity. It has potential hazards to our community that should be addressed.

Robert V Daniels

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Robert V Daniels
203 So Dixon
Anaconda, Mt. 59711

Opportunity Volunteer Fire Department
RFD No. 1, Fire Hall
ANACONDA -:- MONTANA

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
HAZARDOUS WASTE BUREAU

Dear JAMIE STILES,

I am writing this letter regarding the state plan to build a new slump pond South of Opportunity. I feel that we have enough ponds and contaminat ground around us. We don't need any more. Also I am a little worried about the contamination going into the ground water and ruining our wells.

Another consideration is the value of land dropping in Oppor. I do not want to see a new pond.

Sincerely,
Albert Fischer
- CHIEF OVFD -

Gilbert Fischer
1602 Stewart St.
Opportunity, MT.
59711

Dear Jamie, Stokes

This letter is in regard to the plan to build a new settling pond south of Opportunity. I feel there are enough ponds around here now to take of the problem if they are used effectively.

There is also the concern of what this pond may do to the wells that are below this pond.

Thank you
Stan Fisher
135 Dixon
Anaconda Mont.
59711

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

November 30, 1989

Dear Mrs Janis Stiles.

Andy & I would like to strongly express our opposition to the Montana State plan to put settling ponds just to the South east of our home.

Our water is much better than many cities in our state. If the ponds were to be put in as the state proposes we would be exposed to a dangerous situation.

The duck ponds in Warm Springs are a fine plan to help preserve the ducks but lets look to see who will preserve our good water and resulting health.

Also who will provide insurance to insure it will never pollute our ground water?

We would like to strongly urge that the Arco plan be used.

Seriously

Mr & Mrs Andy Anderwald
309 S. Hauser
Anaconda, Mt 59711
406-797-3711

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janice Stillson:

It has been brought to my attention that there is a plan for building a pond south of opportunity. I am very much against what I have heard of it so far. Could you please send me more information on this. How it would effect me and the community of opportunity.

Thank you,

Judy Mimchan
808 Stuart St.
Anaconda, Montana
59711

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janie Stiles

11/30/89

Dear Sir or Madam.

I'm writing As A concerned Opportunity Resident And Also As President of the opportunity Horse Pasture Association
I Feel very Strongly Against Having to forfeit our Horse Pasture lease for the Purpose of Any reclamation work being done, trying to Solve one Problem & Creating Another.
I'm thoroughly Against Having Another Seattling Pond in our back door, & Possibly Contaminating our Ground water.
As to see if Putting this Pond to the South of us we will be surrounded on All four Sides with Contaminated Areas
Let's be Concerned with the People who live Here

Sincerely
Eugene H Calvert
113 Stewart St
Opportunity, Montana
Phone 997-3778 59711

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Nov 30, 1989

Jamie Stiles
Montana Department of Health & Environmental Sciences
Room B201 Cogswell Bldg.
Helena, Mt. 59620

As home owners in Opportunity, Montana, we are concerned about your plans on the Warm Springs settling ponds.

We would like more information on this as to contamination of our water, real estate value etc.

Wayne & Darrell Baker
410 Rockard Rt 1
Anaconda, Mt. 59711

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DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janie Stiles 11-30-89

Dear Janie:

I'm very Concerned about this Pond the State is planning on building in our back yard.

There's a fear of ground water also landslide risks with a pond on the South of us & North also

I very much disapprove

Please ReConsider

The old ponds would work as well and $40,000,000 Cheaper

Who has the Julia Mathews Responsibility for Pollution? R#1 Box 211 Opp. Anaconda Mt 59711

November 30, 1989

Janie Stiles
State Dept. of Health &
Environmental Sciences
Helena MT

RECEIVED
DEC 5 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Ms. Stiles.

I am writing to express my concerns pertaining to reclamation efforts in the Opportunity MT. area. I am concerned that construction of another pond upstream of my community may have adverse effects on the future health of my family. I believe the potential exists for groundwater contamination downstream. Additionally, I am concerned that the value of my property will be negatively affected by such a pond.

As a final note, I feel that the health and well being of the residents in Opportunity must be the first priority in future reclamation efforts. Thank you for your consideration in this matter.

Sincerely

Terry Speer
110 S. Hauser
Opportunity MT

Sage Resources
645 Plymouth St.
Missoula, Montana 59801

Jed Thomas

Office: 406-721-8821
Home: 406-721-4457

12-8-89

RECEIVED
DEC 12 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Kathleen DeMarinis
Project Manager
MDHES
Room B201, Cogswell Building
Helena,MT 59620

RE: WARM SPRINGS POND PROPOSED PLAN

Dear Kathy,

After reviewing the State and ARCO proposals as well as the Clark Fork Coalition's statements I have a three specific comments.

If settling ponds are to be used, they need reinforcement to withstand the maximum credible earthquake. This should be the highest priority issue since a quake related failure would be the most likely natural disaster to allow a release of the bottom sediments. All of the tailings will deposit themselves along the base of the ponds relatively quickly and it is a failure of these lower depths which most concerns me.

The Warm Springs Ponds should not be thought of as a solution to all upstream contamination. Regardless of the size of settling ponds used, a flood will eventually occur that is large enough to overfow or bypass the ponds. The only real solution is to clean the upstream areas. That, of course, is a separate project and those goals should be kept separate from the Warm Springs ponds discussion.

The ponds now provide an excellent and neccesary waterfowl and fisheries habitat. These advantages should be weighed alongside any discussion of pond removal or dry capping.

I hope these comments prove beneficial to your work. I have sent similar comments to Peter Nielsen.

Sincerely,

Jed Thomas

Jed Thomas

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

From The Richest Hill on Earth

Roberts Rocky Mountain Equipment Co.

AREA CODE 406 PHONE 782-1291 P. O. BOX 3045 BUTTE, MONTANA 59701

November 2, 1989

Governor Stan Stephens
Governors Office
Helena, Montana 59601

Dear Governor Stephens:

I have spent many years in the heavy equipment and construction business. During this period of time it's been my misfortune to watch greed and stupidity but the latest has prompted me to write to you personally.

It is my understanding that the State Dept of Health has endorsed Alt.3 and the feasibility study for the Warms Springs Ponds. This would mean an increase of 27% to pond three and this would increase the possibility of breaching the pond.

I cannot believe that the Fish & Game Dept. would allow this as it would destroy the Spawning in both Mill and Willow creeks. As a member of your Clark Fork Rehabilitation Counsel my feelings are against any such stupid thinking.

The two years spent in the study of this project and the 1 ½ million dollars thrown away is what I've been preaching against for a long time.

It was also my understanding there was to be an office of EPA in Butte so that you would not have to listen to problems that could "maybe" be worked out here. Could we have an answer as to the progress on this.

Sincerely,

Joe H. Roberts

JHR/jdk

1803 TAMMANY • ANACONDA, MONT. 59711 PHONE (406) 563-5432

MELVIN A. STOKKE
ENGINEERING CONSULTANT

November 12, 1989

Governor Stan Stephens
Governor's Office
Montana State Capitol
Helena, Montana 59601

Re: Warm Springs Ponds - Silver Bow Creek Super Fund -
MDHES & EPA Proposed Alternate #3

Dear Governor Stephens:

I am Melvin Stokke, former Manager of the Anaconda Smelter, and worked on the tailings ponds as construction superintendent during the period we reinforced the dikes at Warm Springs.

On Thursday, November 9, 1989, I attended the public meeting at the Metcalf Center in Anaconda and find the following in Alternative 3 to be objectionable:

1. Diverting Mill-Willow Creeks into Pond 3, and closing the by-pass, thus forever stopping the fisheries on the upper portion of the creeks.

2. CH_2 M Hill spent over $1.2 million on this study and at the meeting the engineer could not tell us what percent of the watershed went into Mill-Willow Creeks. I later found out that 27% of the watershed goes into these streams.

3. With these 2 streams by-passing Pond 3, the Probable Maximum flood (100 yr.) going into Pond 3 would be decreased by 27%.

4. The Cross-Sectional Views of the Tailings dikes did not show any increase in height, but just adding to the downstream slope of the No. 2 & No. 3 Ponds. When we raised the No. 3 pond dike, we put the downstream slope at 2:25 to 1. They are proposing a slope of 2:5 to 1, which is very little added material.

5. I see no reason to create an additional pond for the PMF; this develops an additional Super Fund site. By increasing the height of No. 3 Pond dikes, thus

1803 TAMMANY • ANACONDA, MONT. 59711 PHONE (406) 563-5432

MELVIN A. STOKKE
ENGINEERING CONSULTANT

adding large tonnages of material to the berms, putting in additional entrance structures on No. 3 Pond, the addition of a self-cleaning trash rack, etc. should eliminate the need for a new pond.

6. Pond No. 1 would be closed with a RCRA compliant cap. The company has spent years developing the wetlands with the Department of Fish & Wildlife. This would dry up the wetland in Pond No. 1. A solution would be to keep the portion of wetland and close the rest of Pond No. 1.

ARCO has developed their plan, and it has a lot of good points. Hopefully, both plans can be studied to come up with the best solution.

Yours Very Truly,

Melvin Stokke

Melvin A. Stokke
Anaconda - Deer Lodge
Reclamation Advocates

S/j

5-05-05-1548

1402 Cable Road
Anaconda, Mt., 59711
November 12, 1989

Governor Stan Stephens
Governor's Office
Montana State Capitol
Helena, Mt., 59601

Re: Warm Springs Ponds proposed MDHES AND EPA Oct., 1989 Clean-Up Plan.

Dear Gov. Stephens:

First of all I would like to congratulate you on how well you "ad libbed" your session with the children in the time preceeding the 10:40 a.m. ringing of the Centennial Bell during last Thursday's Centennial event.

As a father and a grandfather I know we can't fake love with kids; they're too smart. You accomplished your enviable task with undisguised love, care and dignity. Well done!

Secondly, as we enter our second century as a state, those of us living in the Superfund area are concerned with the gigantic problems associated with clean-up plans. As a member of the newly formed Anaconda Deer Lodge County Planning Board's Superfund Committee and the Anaconda, Deer Lodge County Reclamation Advocates (ADRA), co-chaired by Frank Bennett, a member of your special advisory committee, we too feel the time for costly and sometimes redundant studies is now past and we must proceed with workable remedial action.

I believe the plan submitted by the above cited groups is flawed in the respect that the proposed closure of the Mill and Willow creek by-passes, other than during high water or flood periods, endangers Upper Clark Fork River fish hatcheries. Also, the proposed creation of an additional No. 4 settling pond is superfluous and potentially creates yet another Superfund site. (We don't need another.)

Instead, I support Arco's temporary remedial work currently being undertaken in the area. I'm long familiar with the pond system and have toured the area where the work is being done. I don't agree with the Clark Fork Coalition's position that the work should be stopped until more studies are made.

I also support Arco's recently released long-range plan which proposes the removal of mine tailings from the Mill and Willow Creek bypasses to ensure the safety and integrity of the existing fisheries, the raising and strengthening of the No. 2 and 3 dikes to cope with maximum flooding conditions by increasing overall capacity, and the creation of a new water treatment facility to mitigate groundwater seepage. This seems to be a thoroughly thought-out and workable approach to an extremely complex problem.

The fact that the cost of Arco's proposed plan is less than half of the state and federal plan should not necessarily be construed as being quick and cheap "fix." Naturally, Arco wants to get the best bang for

their buck, but as you are aware, they are subjected to the Superfund liability law and are and will continue to be the liable party. They have nothing to gain by a cheap fix.

I sincerely hope the state and federal agencies concerned will seriously consider Arco's plan. The pride of authorship and the time for navel-gazing and deep thought is over. We must move forward to initiate long overdue remedies.

We owe this to curselves, our children and future generations.

Sincerely,

Robert D. Vine

xc: Frank Bennett (ADRA)
Bill Williams (Arco Facilities Montana Manager)
Jim Davison, (Local Superfund Committee Chairman)

November 13, 1989

RECEIVED
NOV 14 1989

Dear Governor Stephens,

I must write this letter saying no to the "Best Alternative" that The Montana Department of Health and Environmental Sciences offered to clean-up the Silver Bow Creek Superfund area.

Here are my simple reasons:

(1) By constructing an 8,000 acre-foot flood pond, they must be expecting the Silver Bow Creek to be flooded by some enormous body of water. Lets say the Pacific Ocean - how ~~many~~ unreal can you get. Silver Bow Creek has never had that much water on it even in the Spring time when the snow is melting and we sometimes have thunderstorms.

(2) Through their contruction of another settling pond (2,000 acre-foot), they would just be contaminating more land in Deerlodge County.

(3) By diverting the Mill-Willow Bypass water would terminate the fish now and in the future as I understand the real procars.

I must also point out that the Warm Springs Ponds is located in Deerlodge County and by only having Public meetings in Butte and Missoula means you're missing out on the whole picture.

Let me tell you about the in-

formation I have obtained by speaking with many, many residents of the Anaconda area. It seems the general opinion in Anaconda regarding the clean-up of this Superfund area is:

They are gonna do just what they want cleaning this area no matter what the mayor and so why spend 25¢ to send a letter or use the gasoline to go to a meeting!

Sincerely,

Vicki L. Lewis

702 Hwy 10A West #5
Anaconda, Montana
59711

November 16, 1989

RECEIVED
NOV 17 '89
GOVERNOR'S OFFICE
HELENA, MONTANA

To: Gov. Stan Stephens
Governor's Office
Capitol Station
Helena, Montana 59620

Since economical growth in Montana is usually on everyones mind at one time or another, I have a question about the company, (CM2H Hill). That is doing the work around the Superfund area surrounding Anaconda and Butte.

From what information I found out for myself and from what other people have told me. First of all I found out that CM2H Hill hasn't done any business in the State of Montana till they got the contract to drill the monitor wells in this area for $1,425,632.00. That's an awful lot of money to drill wells. I bet that they're well pleased with their paychecks.

I have been told that they moved to Montana temporary and with a handful of local employees to keep up appearances, & plan to leave after the work is done. Is this true???

Exactly how much does it cost to drill one well? Another one of my questions is - could a Montana well driller be cheaper?

I'd like to suggest that a rule be passed that all work done in the Superfund areas be done by businesses that have existed in Montana for at least two years before the job exists.

Perhaps you might remember your words just before the ringing of the Brass Bell on Montana's 100th Birthday. In general Montana wanted to decide things for herself - and not let other people in other states do the job for Montana!!

Sincerely,

Nicki L. Leiss

702 Hwy. 10A West #5

Anaconda, Montana

59711

DA 51

FIRST SECURITY BANK

First Security Bank of Anaconda
First Bank Place
P.O. Box 61
Anaconda, MT 59711-0061
Phone (406) 563-5203

November 3, 1989

Governor Stan Stephens
Governor's Office
Montana State Capitol
Helena, Montana 59601

RE: Silver Bow Creek Super Fund Site Report
Warm Springs Ponds Referred Alternative Remediation

Dear Governor Stephens:

Our committee has made a preliminary review of the above report and wish to express concerns regarding the following items at this time:

1. Closing the Mill/Willow bypass thereby running Mill Creek and Willow Creek through the ponds system. This effectively closes these streams as fish hatcheries for the Upper Clark Fork River. Obviously fish cannot migrate through the ponds system during the spawning season to these fisheries.

2. Closure of the Mill/Willow bypass also creates an additional burden on the ponds system with respect to the maximum probable flood. Obviously, if the Mill/Willow bypass is kept open, all of the drainages from Mill Creek and Willow Creek and their tributaries bypass the ponds system and thereby eliminate that drainage as a threat to the ponds system during a maximum probable flood.

3. Creation of an additional new settling pond that creates an area of contaminates that does not now exist. It would appear that if the Mill/Willow bypass and the drainages of Mill Creek and Willow Creek were not placed through the ponds system that the existing ponds system with construction of additional capacity should be able to handle the Silver Bow Creek drainage without creating another area of contamination.

It is our understanding that the responsible party is prepared to clean the contaminated tailings out of the Mill/Willow bypass and clean any areas of Mill Creek or Willow Creek that may be contributing to contamination of those streams so that they may flow freely to the Clark Fork headwaters. Additionally,

it is our understanding that the responsible party is prepared to expand upon the capabilities of the existing ponds system at their present location to deal with probable maximum flood situations from the Silver Bow Creek drainage. The improvements can start as early as the next construction season.

The Department of Health and Environmental Sciences has been made aware of these concerns and as we study the proposed plan in more detail, we will, of course, comment during the public comment period. We do, however, want you to be aware of our initial concerns with respect to the fisheries on the headwaters of the Clark Fork River. Additionally, it has been a pleasure for me to serve as a member of your Clark Fork Rehabilitation Advisory Counsel.

Yours very truly,

F. R. Bennett
Co-Chairman
Anaconda-Deer Lodge Reclamation Advocates

FRB:aak

Montana Operating Engineers
and Associated General Contractors
Joint Apprenticeship and Training Trust

Telephone 406 / 227-5600
3100 Canyon Ferry Road
East Helena, Montana 59635

APPRENTICE

TRAINING

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DEC 15 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 13, 1989

Montana Operating Engineers and Associated General Contractors Training Program would like to provide at this time written comments and documents to be taken into consideration regarding the Warm Springs Superfund site plan.

1. We feel that all contractors and their employees should be required to comply and provide appropriate and required documentation as listed in 29 CFR Part 1910 which applies to Hazardous Waste Operations and Emergency Response. It should be noted that this regulation should apply to other contracts currently taken place in the Silver Bow Creek Superfund sites.

2. We also encourage the EPA and the State Health Department to implement rules that ensure all contractors are paying prevailing wages for the type of work required by their contract. We would encourage the Departments to have contractors supply them with certified employee payrolls similar to Highway Department requirements.

3. We would encourage that the EPA and State Health Department use locally trained people to remediate the environmental hazards the Warm Springs ponds have created.

The Training Program appreciates the opportunity to comment on this project. We stand committed to provide well-trained operators to help solve this environmentally hazardous situation, yet minimize the risks to the individual performing this important work.

Enclosed please also find a copy of the Federal Regulations to which I earlier referred.

Sincerely,

Jim Keane
Administrator

lm

Enclosure

MISSOULA COUNTY

BOARD OF COUNTY COMMISSIONERS
MISSOULA COUNTY COURTHOUSE
MISSOULA, MONTANA 59802

(406) 721-5700

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DEC 15 1989

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 13, 1989

BCC-89-585

Montana Department of Health and Environmental Siences
Hazardous Waste Bureau
Cogswell Building
Helena, Mt. 59620

Dear Sirs:

We are writing to urge your support of an effective and permanent cleanup of the Warm Springs Ponds. Our concern lies with the potential down-stream contamination of the Clark Fork River from the pollution sources between Butte and Anaconda. Since the Warm Springs Ponds serve as the safety valve for protection of the Clark Fork River, it is extremely important to us that any cleanup plan at the Ponds be well planned and permanent.

While we understand that both your plan and ARCO's proposal are considerable improvements over leaving the site as is, it is our understanding that neither of these proposals are of a permanent nature. We endorse the Clark Fork Coalition's recommendation for an effective interim cleanup which is:

1. Not allow contaminated Silver Bow Creek flows to be bypassed around the ponds during any flow smaller than a 100-year flood.
2. Prevent fish kills caused by tailings in the Mill-Willow bypass.
3. Meet state water quality standards when flows are smaller than a 100-year flood.
4. Prevent catastrophic release of pond sediments during major floods and earthquakes.
5. Prevent serious groundwater pollution near the ponds.
6. Allow a more permanent future remedy, such as waste removal from the floodplain.

Since no-one has proposed a permanent remedy to date, we recommend that upon completion of the interim remedy, a permanent solution to the clean up of the contaminated sites between Butte and Warm Springs should be implemented before making a final a decision about cleaning up the Warm Springs Ponds.

Finally, we appreciate the time and effort the State, EPA and ARCO have put into these superfund sites and look forward to playing an active role in putting together a long term permanent solution to eliminating the future polution of the Clark Fork River which is a vital part of Missoula's aquifer.

Sincerely,

Barbara Evans

Barbara Evans, Chairman

Janet Stevens

Janet Stevens, Commissioner

Ann Mary Dussault

Ann Mary Dussault, Commissioner

Steve Antonioli
P.O. Box 633
Philipsburg, MT 59858

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DEC 15 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Kathleen DeMarinis
Mt. Dept. of Health and Environmental Sciences
Helena, MT 59620

Dear Ms. DeMarinis:

I would like to comment on the proposed clean-up of the Warm Springs Ponds.

I am a native and life-long resident of the Clark Fork headwaters. I am also a sportsman and have spent many days fishing and waterfowl hunting in the Warm Springs area.

I **support** the ARCO plan and I **oppose** the MDHES and EPA alternatives for the following reasons:

1. The ARCO plan has superior water treatment provisions.
2. The ARCO plan enhances wetlands far more.
3. Fisheries will be better protected and improved by the ARCO plan.
4. The ARCO plan will be implemented in a more timely and responsive manner.

Sincerely,

Steve Antonioli

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

55

December 12, 1989

Kevin Kirley
Dept. of Health & Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, MT 59620

Dear Mr. Kirley,

I wish to take this opportunity to voice my opposition to the proposed construction of the tailings pond near Opportunity, Montana.

I do not feel that the people of Opportunity were considered in making this proposal nor do I feel that the economic future of the city of Anaconda were considered.

I have two small children and while I realize that there is a lot of contaminated land here, I do not feel it is right to expose these children, or any adults for that matter, to any further contaminated areas.

In closing, I feel the desired effect would be obtained better if the source of the problem were cleaned up rather than creating a new problem.

Thank you for letting me air some of my concerns in this matter.

Sincerely,
Robin M. Richards
302 Erickson, Opportunity
Anaconda, MT 59711

5-05-05-15 56

801 North Third Street
Hamilton, Montana, 59840

December 15, 1989

Dear Sirs:

It is sad that our beautiful state should have the worst Superfund cleanup site in the country. But that's what we've got.

Some people think that a little patchwork will take care of the problem. But I do not and I urge you people who will decide what to do and who will supervise the work to do it right--and then you can take the credit for a job well done.

Remove tailings from the floodplain, raise dikes, put in upstream dams to hold water in any kind of flood situation. Perhaps with new technologies metals can be reclaimed from the wastes someday. But for now make sure that no more fish kills can occur in the area--ever. And prepare the way so that further cleanup upstream can take place with good results.

Don't let Arco negotiate Montana out of a permanent job done the way it should be done, and don't let them stall through negotiations or other legal means which I am sure they will try to do. Get it settled and work started in 1990.

Yours sincerely,

Mary S. Beer

(Mrs. Mary S. Beer)

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dec. 13, 1989

Dick Hafer
Governor's Office
State Capitol
Helena, MT 59620

Dear Mr Hafer,

I wish to take this opportunity to voice my opposition to the proposed construction of the tailings pond near Opportunity.

I do not feel that the people of Opportunity were considered in making this proposal nor do I fel that the economics future of the city of Anaconda was considered.

I have two small children and, while I realize that there is a lot of contaminated land here, I do not feel it is right to expose these children, or any adults for that matter, to any further contaminated areas.

In closing, I feel the desired effect would be obtained better if the source of the problem were cleaned up rather than creating a new problem.

Thank you for letting me air some of my concerns in this matter.

Sincerely,

Robin M Richards
302 Erickson, Opportunity
Anaconda, MT 59711

Dear Sir: Dec. 16, 1989

This letter is my comment about Department of Health & Environmental Science plan for the slum ponds.

We don't need 500 more acres of slum ponds.

Arco's plan is no better.

What needs to be done is all of this mine waste must be put back into the mined out areas and the pit, other wise the problem will never to solved for good.

I have lived in Opportunity for 39 years and watched the ponds get larger every year. I think this can happen again if everyone will work together, but this time the trains & trucks will haul the mine waste back to where they started it can and must be done.

Dec. 16, 89.

If Arco can send Butte mine ore to Japan 7000 miles. And the E.P.A spend 27 million to study the problem, we must start with the first shovel full of mine waste.

Even if it take 20 to 25 years to clean up this 100 mile area it will be worth it no matter what the cost

Arco, E.P.A., Montana State, all must know that this patch work stuff can not clean this upper Clark's Fork's Area.

Thank you

Mr. ~~Serge~~ Myers
6 South Hauser Ave.
Opportunity, Montana
59711

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DEC 19 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Kathleen DeMarinis
Mt. Dept. of Health and Environmental Sciences
Helena, MT 59620

Dear Ms. DeMarinis;

I would like to comment on the proposed clean-up of the Warm Springs Ponds.

I am a native and life-long resident of the Clark Fork headwaters. I am also a sportsman and have spent many days fishing and waterfowl hunting in the Warm Springs area.

I **support** the ARCO plan and I **oppose** the MDHES and EPA alternatives for the following reasons:

1. The ARCO plan has superior water treatment provisions.
2. The ARCO plan enhances wetlands far more.
3. Fisheries will be better protected and improved by the ARCO plan.
4. The ARCO plan will be implemented in a more timely and responsive manner.

Sincerely,

Jim "Blondie" Patrick
1018 So Kep
Butte Mont 59701

December 15, 1989

Ms. Janie Stiles
Montana Department of Health &
Environmental Sciences
Room B201
Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

We are owners of land principally located in the NE 1/4, Sec. 27, T4N, R10W. We use the land to support production of beef cattle. We speak as individual citizens interested in possible impacts upon us through the Warm Springs Pond Superfund activities. Our comments are as follows:

1. Impacts on adjacent lands due to changes in the subsurface drainage patterns and flow, including groundwater levels, resulting from the construction of impoundments upstream of the present Warm Springs Ponds needs to be considered and, if required, mitigated.

2. As individual citizens, we found it very difficult to become informed on the plans prior to the public hearing. The only broadly disseminated information seemed to be that of general nature provided by normal news media coverage.

3. We believe a process which excludes the party (as we understand it, ARCO) which is expected to implement and pay for the plan is a waste of resources.

Thank you for the opportunity to express our concerns and opinion of the Warm Springs Ponds Proposed Plan.

Yours truly,

Robert Periman
Nita Periman

Robert & Nita Periman
P. O. Box 104
Butte, MT 59703

RAP/np

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DEC 20 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
& HAZARDOUS WASTE BUREAU

Jack Atcheson & Sons, Inc.

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(406) 782-3498
Travel Agency (406) 494-2415

Dec 18, 89

Gentlemen

I oppose the "state plan" at warm spring
It does nothing for wildlife & fish, all
it does it give more free Londers money to
study

Jack Atcheson

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DEC 20 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

WATER RESOURCES DIVISION
STAN STEPHENS, GOVERNOR

LEE METCALF BUILDING
1520 EAST SIXTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-6699
TELEFAX NUMBER (406) 444-6721

HELENA, MONTANA 59620-2301

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DEC 21 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 19, 1989

Montana Department of Health and Environmental Sciences
Solid and Hazardous Waste Bureau
Room B201, Cogswell Building
Helena, MT 59620

Attn: Mr. Vic Andersen

Dear Mr. Andersen:

We have reviewed the "Feasibility Study for the Warm Springs Ponds Operable Unit" and recommend that the hydrologic standard for emergency and principle spillways, contained in the Dam Safety Administrative Rules under Section 36.14.502, should not be used as the sole criteria for selection of the design flood for this project. Several characteristics of the Warm Springs Ponds Operable Unit are significantly different from most typical reservoirs for which the Dam Safety Rules and the hydrologic standard were intended. We recommend, therefore, that the Warm Springs Ponds study should include a risk analysis and should offer rationale for selection of the design flood event. We have several reasons for making this recommendation.

First, the Dam Safety Rules are designed to provide a degree of protection that limits the chance of loss of life due to inundation downstream of a reservoir. Inundation in this case pertains to the physical consequences of uncontaminated water that has been released from a reservoir due to a dam failure. The probabilities for loss of life from dam break inundation are available in the literature. The hydrologic standard in the Dam Safety Rules is designed to give a consistent, minimum level of protection based on these probabilities. The Warm Springs project introduces a new variable for consideration, the probability of loss of life due to toxic contamination resulting from a dam failure. It is improper to use the Dam Safety Rules as the sole criteria for selecting a design storm that gives adequate protection from loss of life due to toxic contamination.

Second, the Warm Springs study applies the state's dam safety hydrologic standard not only for designing the spillway structure, but also for designing the embankment itself. Because of the uniqueness of the Warm Springs project, the spillway is actually a diversion structure which precedes the reservoirs upstream. Excess flow is diverted into a canal that routes the flow along the toe of the embankments, and spillway flows may actually impinge upon the embankments for most of their length. This is not the typical situation for which the minimum hydrologic standards given by the Dam Safety Rules were intended, and it is improper to use them as the sole criteria in this circumstance.

Finally, Rule 36.14.208 of the Dam Safety Rules requires a single classification for dams being operated as a system or in a series. It would be appropriate to also use a single design flood for all three Warm Springs Ponds, at least in regards to the canal and embankment structures. To armor the embankments for 50 percent of the probable maximum flood (PMF) at the upstream end of the canal and for 20 percent of the PMF at the downstream end is not consistent with the intentions of the Dam Safety Rules.

For these reasons, I feel that unsupported use of the hydrologic standards contained in the Dam Safety Rules is not consistent with the situation at the Warm Springs Ponds and thus, should not be used as the sole criteria for design of the Warm Springs Ponds.

Sincerely,

Laurence Siroky

Laurence Siroky
Assistant Administrator
Water Resources Division

LS:gln

3014 IRENE STREET
BUTTE, MT. 59701
DECEMBER 19, 1989

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
COGSWELL BUILDING
HELENA, MT. 59620

GENTLEMEN:

THIS LETTER IS BEING SUBMITTED TO OPPOSE YOUR PLAN FOR THE WARM SPRINGS PONDS, OUT FOR PUBLIC REVIEW.

I THOUGHT THE VALUE OF WETLANDS FOR WILDLIFE AND SPECIFICALLY WATERFOWL, WAS WELL ESTABLISHED BY NOW. THE PRESENT POND SYSTEM IS AN EXCELLENT PRODUCTION AND BROOD-REARING AREA FOR BOTH DUCKS AND GEESE. YOUR PLAN IS TOTALLY SILENT ON WATERFOWL-WETLANDS AND POTENTIAL FOR ENHANCING WATERFOWL PRODUCTION. IT IS A VERY POOR PLAN, HAS NO MANAGEMENT UTILITY AND CERTAINLY DOESN'T REPRESENT THE EXISTING SITUATION OR POTENTIAL OF THE AREA.

YOUR PLAN IS TYPICAL OF EPA/MDHES, A 'GIMMIK' TO OBTAIN FEDERAL FUNDS FOR MORE WASTEFUL STUDIES THAT GO NOWHERE.

I SUPPORT THE PLAN OF ARCO AND THEIR PLAN HAS MANAGEMENT UTILITY. FOR EXAMPLE, MORE WETLANDS WILL BE DEVELOPED, WATERFOWL NESTING ISLANDS WILL BE INCORPORATED INTO THEIR PLANS, HAS SPORTSMEN SUPPORT AND WOULD BENEFIT THE WILDLIFE RESOURCE. YOUR PLAN ON THE OTHER HAND LACKS ALL OF THESE MERITS.

THE VALUE OF WETLANDS AND THE NEED FOR WETLANDS HAVE BEEN RECOMMENDED TO MDHES AND EPA OVER THE PAST 5 YEARS AND ALL RECOMMENDATIONS HAVE BEEN IGNORED, WHY? PLEASE REPLY.

I HOPE THE GAO AUDIT WILL LOOK INTO THIS ALONG WITH YOUR AGENCY AND EPA'S WASTEFUL, WORTHLESS, EXPENSIVE STUDIES.

NONE OF THESE SO-CALLED 'COMPLEX' STUDIES HAVE EVER BEEN PUBLISHED IN ANY SCIENTIFIC JOURNAL WHICH SHOULD GIVE THE 'SCIENTIFIC COMMUNITY' SOME INDEX OF THERE VALUE — WORTHLESS/UNPUBLISHABLE PAPER.

YOUR PLAN IS A 'SHAMBLE' AND WAS PROBABLY WORKED OUT ON A COMPUTER IN THE OFFICE. HAVE YOU OR YOUR STAFF EVER BEEN ON THE SITE? I DOUBT IT!

IT IS QUITE OBVIOUS THAT YOUR MULTI-MILLION DOLLAR ALTERNATIVES IS JUST A WAY TO KEEP THE 'STUDIES TROUGH' FULL.

YOURS TRULY,

Site_____
File #_____
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

RECEIVED
DEC 22 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Solid and Hazardous Waste Bureau
Montana Department of Health and Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Bureau Staff:

Although the Clark Fork River is primarily in Montana, we Idahoans must live with many of its problems. Around 90 percent of the annual recharge of Lake Pend Oreille comes from the river, so we who live, work and recreate around the lake are concerned with all decisions that affect the quality of the Clark Fork. Decisions involving the Superfund sites on the upper river are of critical importance to us because they will profoundly affect water quality in the Clark Fork, and thus Lake Pend Oreille, for centuries.

Correcting problems at the Warm Springs Ponds is especially crucial because of their importance as a safety valve that helps keep mining pollutants from migrating downstream. We strongly recommend the EPA and health department adopt an alternative from its ponds feasibility study that ultimately leads to permanent elimination of pollution from the study area.

The agencies should:

- adopt an alternative that combines raising the pond dikes and constructing an upstream impoundment for handling flood flows;

- ensure the ponds and all upstream impoundments are bolstered to withstand major floods and earthquakes, and include design criteria that guarantees flood waters are effectively treated before beng discharged from the pond system;

- ensure tailings are removed from the Mill-Willow bypass, and if it is to be used for Mill and Willow Creek discharges, that the pollution sources of those creeks be eliminated;

- guarantee that water discharged from the ponds up to at least a 100-year flood event meet state water quality standards;

- recognize that this feasibility study does not include a permanent cleanup solution, but instead prescribes stopgap measures that ensures the ponds are stable and working and that fish kills will be reduced so that Superfund can concentrate on upstream pollution sources;

- analyze in detail engineering alternatives for eventual removal of all wastes from the floodplain, including studying metal removal technologies and siting of a local permanent repository.

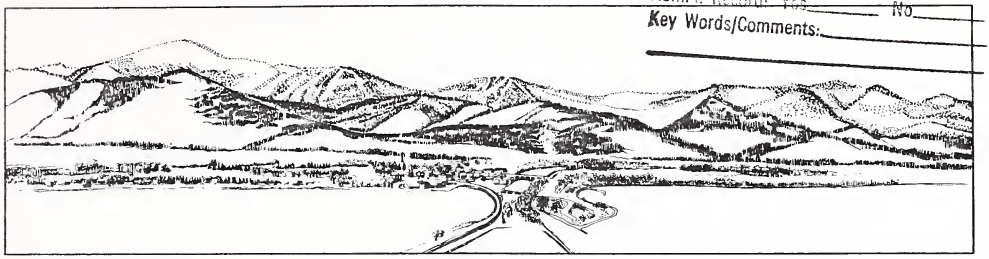
The Lake Pend Oreille area offers a quality of life matched by few areas in the West. People come here because of the lake's premium water quality, recreation and fish. But aside from the amenities, the lake is the hub for a bustling tourism and services industry. It also attracts outside investors and is bolstered by a transfer-fund economy, largely represented by retirees. Tourism is Idaho's second largest industry, accounting in 1988 for nearly 5.5 million jobs with an annual payroll of $6.5 billion. According to a 1988 state report, tourism accounts for more than $1.2 billion in expenditures in Idaho. The Idaho Panhandle and especially the Lake Pend Oreille area, contribute a large chunk of those expenditures and jobs.

To maintain this economic vitality we must maintain the water quality of Lake Pend Oreille. And that means maintaining and improving the quality of the Clark Fork River. Please keep that in mind as decisons are made for the Warm Springs Ponds and other upper basin Superfund sites.

Sincerely,

Jean Pike
Executive Director
Central Business Associati
of Sandpoint, Idaho

Site
File #
Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:



CITY OF SANDPOINT • CITY HALL • SANDPOINT, IDAHO 83864 • 208-263-3158 • FAX 208-265-4592

RECEIVED
DEC 22 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 19, 1989

Kathleen DeMarinis
c/o Montana Department of Health
and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Ms. DeMarinis:

Enclosed please find a certified copy of City of Sandpoint City Council Resolution No. 46-89 registering our support of an effective and permanent cleanup of Montana's Silver Bow Creek Superfund Site.

Your attention to this resolution and distribution of it to the appropriate persons is appreciated.

Very truly yours,

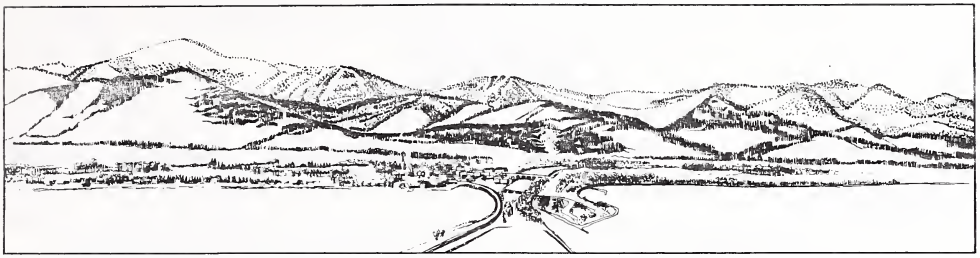
CITY OF SANDPOINT

Helen M Newton

Helen M. Newton, CMC
Administrative Assistant

Enc.

cc:Clark Fork Coalition



CITY OF SANDPOINT • CITY HALL • SANDPOINT, IDAHO 83864 • 208-263-3158 • FAX 208-265-4592

CLERK'S CERTIFICATE OF TRUE COPY OF RESOLUTION

I, the undersigned Clerk of the City of Sandpoint, a municipal corporation of the State of Idaho, Bonner County, do hereby certify that the attached Resolution is a full, true and correct copy of Resolution No. 46-89, duly adopted at a regular meeting of the City Council of Sandpoint, Idaho, duly and regularly held at the meeting place thereof held on December 18, 1989, of which meeting all members of said Council had due notice and at which a majority thereof were present, and that at said meeting said Resolution was adopted by the following vote:

AYES, and in favor thereof, Council members:
Sheffler
Hanson
Vandenberg
Hawkins
Miller

NOES, and opposed thereof, Council members:
None

ABSENT, Council members:
Wengren

ABSTAIN, Council members:
None

I further certify that I have carefully compared the same with the original Resolution on file and of record in my office; that said Resolution is a full, true and correct copy of the original Resolution adopted at said meeting, and that said Resolution has not been amended, modified or rescinded since the date of its adoption, and is now in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the official seal of said City on December 19, 1989.

Helen M. Newton

Helen M. Newton, City Clerk

SEAL

No.: 46-89
Date: December 18, 1989

RESOLUTION
OF THE CITY COUNCIL
CITY OF SANDPOINT

TITLE: SUPPORT OF AN EFFECTIVE AND PERMANENT CLEANUP OF MONTANA'S SILVER BOW CREEK SUPERFUND SITE

WHEREAS: The Montana Department of Health and Environmental Sciences and the U. S. Environmental Protection Agency have proposed a $62.5 million dollar cleanup plan for the Warm Springs Ponds, a toxic waste site in the upper Clark Fork basin and a part of the Silver Bow Creek Superfund site; and,

WHEREAS: The Clark Fork Basin is the primary source of water for Lake Pend Oreille; and,

WHEREAS: The Warm Springs Ponds are the safety valve that protect the Clark Fork from the vast pollution sources between Butte and Anaconda; and,

WHEREAS: It is vital to the personal health and economic well being of our community that cleanup of pollution sources in the Clark Fork Basin continue and that they be of a permanent nature.

NOW, THEREFORE, BE IT RESOLVED THAT: The City Council of the City of Sandpoint encourages the Montana Department of Health and Environmental Sciences and the U. S. Environmental Protection Agency to aggressively pursue a permanent cleanup plan for the Warm Spring Ponds; and,

BE IT FURTHER RESOLVED THAT: The City Council of the City of Sandpoint respectfully but specifically requests that the responsible agencies give particular attention to the testimony of, and criteria outlined by, the Clark Fork Coalition, an organization which has studied this site and its situation and whose only concern is that of protecting the environment, especially as it relates to water quality in the Clark Fork Basin.

Ronald Chaney
Ronald Chaney, Mayor

ATTEST:

Helen M. Newton
Helen M. Newton, City clerk

CITY COUNCIL MEMBERS	YES	NO	ABSTAIN	ABSENT
(1) Wengren				X
(2) Sheffler - Second	X			
(3) Hanson	X			
(4) Vandenberg	X			
(5) Hawkins	X			
(6) Miller - Motion	X			

Site_____
File #_____
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

RECEIVED
DEC 22 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Solid and Hazardous Waste Bureau
Montana Department of Health and Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Bureau Staff:

Although the Clark Fork River is primarily in Montana, we Idahoans must live with many of its problems. Around 90 percent of the annual recharge of Lake Pend Oreille comes from the river, so we who live, work and recreate around the lake are concerned with all decisions that affect the quality of the Clark Fork. Decisions involving the Superfund sites on the upper river are of critical importance to us because they will profoundly affect water quality in the Clark Fork, and thus Lake Pend Oreille, for centuries.

Correcting problems at the Warm Springs Ponds is especially crucial because of their importance as a safety valve that helps keep mining pollutants from migrating downstream. We strongly recommend the EPA and health department adopt an alternative from its ponds feasibility study that ultimately leads to permanent elimination of pollution from the study area.

The agencies should:

- adopt an alternative that combines raising the pond dikes and constructing an upstream impoundment for handling flood flows;

- ensure the ponds and all upstream impoundments are bolstered to withstand major floods and earthquakes, and include design criteria that guarantees flood waters are effectively treated before beng discharged from the pond system;

- ensure tailings are removed from the Mill-Willow bypass, and if it is to be used for Mill and Willow Creek discharges, that the pollution sources of those creeks be eliminated;

- guarantee that water discharged from the ponds up to at least a 100-year flood event meet state water quality standards;

- recognize that this feasibility study does not include a permanent cleanup solution, but instead prescribes stopgap measures that ensures the ponds are stable and working and that fish kills will be reduced so that Superfund can concentrate on upstream pollution sources;

- analyze in detail engineering alternatives for eventual removal of all wastes from the floodplain, including studying metal removal technologies and siting of a local permanent repository.

The Lake Pend Oreille area offers a quality of life matched by few areas in the West. People come here because of the lake's premium water quality, recreation and fish. But aside from the amenities, the lake is the hub for a bustling tourism and services industry. It also attracts outside investors and is bolstered by a transfer-fund economy, largely represented by retirees. Tourism is Idaho's second largest industry, accounting in 1988 for nearly 5.5 million jobs with an annual payroll of $6.5 billion. According to a 1988 state report, tourism accounts for more than $1.2 billion in expenditures in Idaho. The Idaho Panhandle and especially the Lake Pend Oreille area, contribute a large chunk of those expenditures and jobs.

To maintain this economic vitality we must maintain the water quality of Lake Pend Oreille. And that means maintaining and improving the quality of the Clark Fork River. Please keep that in mind as decisons are made for the Warm Springs Ponds and other upper basin Superfund sites.

Sincerely,

Rick Lang, Mayor

City of Kootenai
P.O. Box 566
Kootenai, ID 83840
(Bonner County, ID)

United States Department of the Interior

GEOLOGICAL SURVEY

Water Resources Division
Federal Building, Room 428
301 South Park Avenue, Drawer 10076
Helena, Montana 59626-0076

RECEIVED
DEC 22 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 20, 1989

Site_____
File #_____
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

Mr. Vic Andersen
DHES, Solid and Hazardous Waste
Bureau, Superfund Program
Cogswell Building, Room B201
Helena, Montana 59620

Dear Vic:

Enclosed are comments on the Feasibility Study and Proposed Plan for the Warm Springs Operable Unit of the Silver Bow Creek NPL Site. The comments are provided on a technical assistance basis only and do not constitute any position the Department of Interior may have concerning possible damage to natural resources under the Department's trusteeship.

If you have any questions, please feel free to contact David Nimick, Bob Davis, or me.

Sincerely,

Joe A. Moreland

Joe A. Moreland
District Chief

Enclosure

cc: Robert F. Stewart, USDI, OEPR, Denver, CO

COMMENTS ON THE WARM SPRINGS PONDS FEASIBILITY STUDY

The following comments are provided on a technical assistance basis only and do not constitute any position the Department of Interior may have concerning possible damage to natural resources under the Department's trusteeship.

1. The Superfund investigations of the Warm Springs Ponds may underestimate the current amount of ground water which discharges from the Warm Springs Ponds to the Mill-Willow Bypass and the Clark Fork (River) and to minimize the importance of the contaminants this ground water contains. Based on the data presented in the Phase I and II RI (Remedial Investigation) reports, ground water contributes a substantial portion of the flow and contaminant load to the river during low flow periods. Except for a trench which may intercept a fraction of the flow in one area , no remediation is planned.

   The magnitude of ground-water discharge to surface waters was estimated in the RI's from stream-gaging data and ground-water flow calculations. Discharge estimates may be slightly low for the upper bypass along Pond 2 and 3 between SS-18 (upstream end of bypass) and SS-25 (bypass upstream of Pond 2 outlet) and very low for the lower bypass and the beginning of the Clark Fork.

   For the upper Mill-Willow Bypass, flow calculations (using hydraulic conductivity data derived from a pumping aquifer test) indicate that ground-water inflow from the Warm Springs Ponds is 2.7 ft^3/s (cubic feet per second) (p. 3-46, CH2M Hill, 1989a). Inflow to the bypass from the west is estimated at 0.7 ft^3/s (p. 10, Tech. Memo. Warm Springs Ponds Ground Water Flow Calculations, Appendix B, CH2M Hill, 1989a). Because this figure was based on a hydraulic conductivity derived from slug tests rather than pumping aquifer tests, actual ground-water inflow to the Mill-Willow Bypass from the west may be somewhat greater than 0.7 ft^3/s. Consequently, the combined calculated inflow to the upper bypass from the east and west is probably somewhat greater than 3.4 ft^3/s.

   Streamflow data from the Phase I RI indicate that the average gain in the upper Mill-Willow Bypass (between SS-18 and SS-25) is 3.3 ft^3/s for 12 measurements episodes. However during 3 of these episodes, flow was greater than 250 ft^3/s and the bypass lost an average of 1.8 ft^3/s. Looking at low flow periods (June 19, July 24, and August 29, 1985), ground-water inflow averaged 3.7 ft^3/s. In summary, flow calculations and gaging data indicate that ground-water discharge to the upper bypass is probably greater than 3.4 ft^3/s during low-flow periods.

   Inflow to the lower Mill-Willow Bypass and upper Clark Fork from the Pond 1 area is difficult to estimate because streamflow data are lacking. Ground-water flow in this area toward the bypass and river was calculated in the Phase II RI (p. 3-46) to be between 1.8 and 3.8 ft^3/s based on hydraulic conductivity values derived from a pumping aquifer test. The hydraulic conductivity value which results in the 1.8 ft^3/s figure is of dubious value (p. 3-43, CH2M Hill, 1989a) and actual flow may be

closer to 3.8 ft^3/s. The 1 ft^3/s flow rate cited in the FS (Feasibility Study) (p. 2-76, CH2M Hill, 1989b) is questionable because it was based on slugtest data and was shown to be low in the Phase II RI.

The total ground-water discharge to the entire Mill-Willow Bypass from SS-18 to the start of the Clark Fork could be as high as 7.5 ft^3/s. None of the Warm Springs Ponds studies recognize that magnitude of ground-water discharge.

The importance of inflow of contaminated ground water to the Clark Fork should be evaluated during periods of low flow rather than periods of average flow. Low flows at SS-29 (Perkins Lane bridge) were about 10 ft^3/s in August 1988 and 18 ft^3/s in August 1989 (provisional data from the USGS gage, Clark Fork near Galen). Although summer flows at SS-29 are depleted by an ungaged diversion between the start of the river and SS-29, it is apparent that ground water supplies a substantial portion of the low flows in the river.

Contaminant loads in surface water increase through the bypass and upper Clark Fork. The Phase I RI states that 30% of the contaminant load in the bypass between SS-18 and SS-25 is derived from ground water. Other evidence of contaminated ground-water discharge in the upper bypass comes from the results of the July 1988 sampling, when all flow in the bypass came from ground-water discharge. Sampling at SS-18C, SS-18C1, and SS-18D showed that concentrations of cadmium in surface water were between 5.8 and 6.4 µg/l (micrograms per liter), well above the acute and chronic freshwater aquatic life standards. The RI reports do not consider the possibility of similar increases in contaminant load due to ground-water discharge to the lower bypass and Clark Fork. Based on interpretation of chemical data from the summer of 1985 (Multitech, 1987a,b), contaminant loads apparently increase in this reach. Exact loading cannot be calculated because of the ungaged diversion between Warm Springs and SS-29. However the fact that concentrations of copper and zinc generally are higher at SS-29 than they are upstream at SS-25, PS-12 (Pond 2 outlet), or SS-28 (Warms Springs Creek) indicates that metals are being introduced to the lower bypass and river. The sulfate load may also be higher at SS-29. The most likely source of these contaminants is the ground-water plume downgradient of Pond 1. Ground water in this area has high sulfate and zinc concentrations. Copper concentrations are reportedly below detection levels (8 µg/l). However, it would be expected that some copper is leaching out of the ponds with the high levels of zinc. If no copper is present in the ground water, then other copper sources should be investigated. It would be advisable to recheck the copper concentrations in the ground water. Whatever the source, the increase in metals through the lower bypass and upper river is important because these metals generally are above acute and chronic freshwater aquatic standards at SS-29.

To summarize, contaminated ground water emanating from the ponds discharges metals and sulfate to the bypass and river and exacerbates the poor aquatic life conditions in the river during low flow periods.

2. The FS proposes construction of a trench to intercept contaminated ground water downgradient of Pond 1. No remediation is proposed for the ground water which discharges to the upper bypass. The design of the proposed trench raises several concerns:

   a. The trench will have a maximum depth of 18 feet (fig. 7-18, CH2M Hill, 1989b) and the maximum depth probably will only be at the one end from which intercepted water will be pumped back to Pond 3. The shallow aquifer, however, is deeper than 18 feet in most places and therefore the trench will not intercept all ground-water flow. Cross-sections of the area downgradient of Pond 1 (fig. 3-5 and 3-6, CH2M Hill, 1989a) show the depth of the shallow aquifer at 9 wells which fully penetrate the aquifer. The bottom of the aquifer is deeper than 18 feet at all but one of these wells. Depths range from 15 to 34 feet and average about 25 feet in these 9 wells. Actual depths of the trench at given locations are not specified and logs for some wells in the area are not in the Phase II RI (see Comment 4) so a full evaluation of how much ground water the trench might intercept is not possible.

   b. A ground-water flow model (Tech. Memo. appendix B, CH2M Hill, 1989a) was also developed to determine the effectiveness of a trench and to estimate the flow rate into the trench. This modeling effort has several deficiencies. The hydraulic conductivity values used in the model were based on slug-test data and are low. The wells used to simulate the trench were deeper (20 feet) than the proposed trench (8-18 feet). These wells were also assumed to reach the base of the shallow aquifer, but these simulated conditions do not match actual conditions. A more realistic model would simulate the trench as a drain rather than as a series of pumping wells (which would require the use of a different computer model). A constant head boundary was used to model the probably limited ground-water inflow from Tertiary bedrock on the east side of the model area. Use of a constant head boundary here is unrealistic unless the amount of modeled inflow through this boundary was roughly equal to actual inflow. It would be difficult to predict what a corrected model would predict for inflow to the trench.

   c. If the open trench is not cleaned regularly, it will quickly begin to fill with vegetation, windblown dirt, and sloughed sidewall material. Obviously, if the trench starts to fill, its effectiveness will be reduced.

   d. The trench will intercept only that part of the existing ground-water plume near the trench. Some currently contaminated ground water will continue to flow towards the Mill-Willow Bypass and Clark Fork.

   e. The trench may dewater tailings contained in Pond 1 thereby causing release of metals (see Comment 3a).

3. The RI reports describe current conditions but make little effort to predict future conditions in or surrounding remediated and unremediated

wastes. The proposed remediation will alter metal mobilization pathways through the Warm Springs Ponds operable unit but it is not at all clear what the net effect will be. Important questions which remain unanswered include:

a. What will be the affect of dewatering tailings and contaminated sediments which currently are immobilized in the reduced conditions of pond bottoms? Oxidation of these materials could lead to large releases of metals. As designed, the ground-water trench planned for the interior of Pond 1 will dewater tailings (p. 7-90, CH2M Hill, 1989b). This action will allow oxidation and mobilization of the reduced metals in sediments which have collected in Pond 1. As shown for the tailings in the Opportunity Ponds (TetraTech, 1987), the mobilization of metals can be substantial when metal-rich sediments change from reduced to oxidized conditions. The extent of this mobilization should be quantified and its effect understood. The trench below the Pond 1 berm may also dewater contaminated sediments causing a similar mobilization of metals.

b. What will the ground-water plume in both the shallow and deep aquifers be in the future? What contaminants will they contain? Will the aquifer's neutralization and metal attenuation capacities be exhausted at some point? These issues have not been addressed.

4. Well-completion logs for wells WSP-GW-17, 18S, 18D, 19S, & 19D and WSP-PW-01 are not in the Phase II RI so a complete analysis of the ground-water investigation could not be done.

5. Well development for most observation wells was inadequate because the final water produced from the wells was not clear. Wells completed in sands and gravels such as those encountered in the area can be developed to produce clear water, but it can take longer than the 10-85 minutes spent at each well. Measured trace-metal concentrations in turbid water samples from wells that have been inadequately developed or purged may not be representative of actual levels in ground water. (Palmer and others, 1987).

6. The map of the extent of ground-water contamination (fig. 2-19, CH2M Hill, 1989b) is incomplete because the boundaries of the plume either stop at the boundaries of the operable unit or at the Mill Willow Bypass and Clark Fork. The plume probably extends beyond these boundaries. These streams may be a ground-water divide and therefore limit further migration of the plume as the RI investigations seem to assume, but this has not been documented. A complete risk assessment cannot be done without knowledge of the full extent of the plume.

7. Interconnection between the shallow and deep aquifers may be more significant than the RI reports indicate. Samples from nested wells WSP-GW-7 and 15 along the bypass and WSP-GW-10 near Pond 1 show that sulfate concentrations are higher in the deeper aquifer than the shallow aquifer. Manganese is also present in the deeper aquifer's plume. It appears that the plume in the deeper aquifer has not developed as fully as in the shallow aquifer, but given sufficient time, it could.

8. The proposed compliance point for the Warm Springs Ponds operable unit is located near the current beginning point of the Clark Fork (fig. 5-1, CH2M Hill, 1989b). As noted elsewhere in these comments and in the FS (note 4, fig. 6-1, CH2M Hill, 1989b), contaminated ground-water discharges to the Clark Fork. Therefore it may be advisable to relocate the compliance point far enough downstream to ensure interception of the operable unit's entire current and future ground-water plume.

9. The proposed remediation outlines a plan to divert Mill and Willow Creeks into Pond 3. No surface water (except during large flood events) would enter the bypass upstream of the new Pond 3 outlet and therefore the FS assumes that the upper bypass will be dry. From the previous comments, it is probable that the bypass will receive contaminated ground-water discharge from the Warm Springs and Opportunity Ponds. With no surface water entering to dilute the inflow from ground water, water quality in the remediated upper bypass will likely be considerably worse than it is now.

10. Consideration should be given to the post-remediation ground-water gradient from the Warm Springs Ponds to the Mill-Willow Bypass. If the water level in Pond 3 is increased and the elevation of the bypass is lowered by excavation of contaminated and borrow material, ground-water discharge to the bypass will likely increase.

REFERENCES

CH2M Hill, 1989a, Final Silver Bow Creek CERCLA Phase II Remedial Investigation Data Summary, Warm Springs Ponds Operable Unit, 3 volumes (May 1989).

CH2M Hill, 1989b, Silver Bow Creek Investigation Draft Feasibility Study for the Warm Springs Ponds Operable Unit, 2 volumes (October 1989).

Multitech, 1987a, Silver Bow Creek Remedial Investigation Draft Final Report, Surface-Water and Point-Source Investigation, Appendix A, Part 1: Report and Part 2: Attachments (January 1987).

Multitech, 1987b, Silver Bow Creek Remedial Investigation Draft Final Report, Warm Springs Ponds Investigation, Part 1: Report and Part 2: Attachments (March 1987).

Palmer, C. D., Keely, J. F., and Fish, William, 1987, Potential for solute retardation on monitoring well sand packs and its effects on purging requirements for ground water sampling: Ground Water Monitoring Review, V. 7, No. 2, p. 40-47.

TetraTech, 1987, Anaconda Smelter RI/FS Master Investigation Draft Remedial Investigation Report (March 1987).

Site_____
File #_____
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

Frank Williams Rives
2030 Kensignton Ave.
Missoula, MT 59801

RECEIVED
DEC 27 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Kathleen DeMarinis
Montana Department of Health
and Enviromental Science
Helena, MT 59620

Dear Ms. DeMarinis:

As a Montana citizen, avid canoeist and kayaker, conservationist and child of the Earth, I am quite naturally very concerned about the cleanup of the 25 Clark Fork valley Superfund Sites.

The Warm Springs Ponds operable unit is a good beginning. It is very important that ARCO, EPA, MDHES, and the citizens of Montana make this first temporary step a wise, well-considered and well-chosen one.

All future cleanups of the other 24 Superfund Sites in the Clark Fork valley will be influenced by what first steps were taken.

If the decision is made to do less than a complete job at the Warm Springs Ponds, I am afraid such a decision will unfavorably influence the same such actions for future cleanups.

For this reason I am opposed to the Preferred Alternative (#3) as offered, because it will inadequately deal with the possibility of continued downstream contamination due to flood.

It is imperative that the Warm Springs Ponds be able to withstand a full Maximum Credible Earthquake (MCE) and a full Probable Maximum Flood (PMF), and that the 8,000 acre-feet upstream impoundment be constructed.

If the additional cost of such construction is undertaken and the ponds never have to withstand either a MCE or a PMF, the money spent was still well spent because the valley and the citizens were protected.

If, on the other hand, the decision is made to spend money on only fractional protection from a PMF and the ponds are breached by such a flood, then all of the money spent on such a plan was wasted and the citizens of Montana will have to face another massive fish-kill and probable threats to human health.

The reasoning for only building up the weirs to withstand .5 of a PMF is based I assume on the improbability of a 100-year flood occurring. Such a flood could come at anytime. If the ponds are expected to have a 70-year lifespan, then there is about a 70 percent chance of such a flood occurring during this lifespan. If there was a 70 percent chance your house might burn down while you owned it wouldn't you buy fire insurance. I would!

Fractional protection from the PMF is a crap shoot. Maybe it will be adequate. Maybe it will not be adequate. But the downstream occupants are the only ones who stand to lose anything, and nothing to gain in this gamble. The cost will not be just wasted money. It will also include a loss in fisheries, an endangered enviroment and probable endangerment of public health.

I am a little concerned that the Montana Department of Health and Enviromental Science and the Enviromental Protection Agency would propose such action be undertaken.

Do the citizens of the Clark Fork valley deserve only partial protection? Should our government gamble against the improbability of the PMF and use the human and non-human inhabitants as table stakes. I think not.

The cost of such a project is very high. However, prevention is always much cheaper than a cleanup, particularly after an inadequate attempt.

The Clark Fork River is the major source of the aquifer from which over 70,000 citizens draw their water. We are entitled to the best (purest) water we can obtain.

If more money must be spent for maximum protection, then we should spend it. The money will be well spent.

Of the seven alternatives offered I support Alternative 2. I believe Alternative 2 will best protect the human and non-human inhabitants of the Clark Fork valley below the Warm Springs Ponds. The primary strengthes of this plan are protection from both a MCE and a PMF, and an 8,000 acre-feet upstream flood impoundment. Also it would ensure better surface water quality below the ponds, even during floods.

Alternative 2 would take an important first step in a permanent solution of mining waste contamination by removing the contaminants from the floodplain.

I do wonder why it is necessary to remove the contaminants as far as Idaho. Not only would this be very costly, but dangerous (in case of accident en route). Such contaminants should be treated and disposed of outside the floodplain and as close to the facility as possible.

Alternative 2 is four times more costly than Alternative 3. The question is who should pay for the problem. ARCO, of course, would pay for either alternative.

However, if Alternative 3 as proposed is inadequate to deal with future contamination and I believe it is inadequate, then the citizens of Montana will pick up the check.

There are "hidden" costs that are easily overlooked in our money-oriented society. There is a cost for everything we do or do not do. Such a cost is often not apparent because the payment is hidden and years down the road. An example: the one who bears the cost of ingestion of carcinogenic materials is the physical consumer of those materials, through higher health costs, wages lost for sick days, and, much worse, through pain, bad health and death.

While I agree we must consider the cost-effectiveness of each of the alternatives, I also believe we must consider who must bear the cost and at what price. My health is priceless to me. So is clean water.

Once contamination is downstream of the Warm Springs Ponds it is no longer ARCO's problem or responsibility. After contaminated water gets downstream of the ponds, all costs are borne by the citizens of Montana and Idaho. These costs are by no means only financial

I say all reasonable steps must be taken to keep the contamination where it can be most effectively dealt with, and where the responsibility for the wastes is established.

Also it should be stressed that thus far only temporary measures have been presented. The public needs to be informed as to what the government and ARCO plan to do to permanently solve the contamination problem.

The proposed Alternative 3 is a big improvement over what we have now. But Alternative 3, nor Alternative 2, nor any of the others offer a permanent solution.

As a member of the Clark Fork Coalition, I agree with and support these actions that the Coalition call for:

A long-term plan which will economically remove all mine waste from the floodplain, but not necessarily as far as Idaho.

Fix the Warm Springs Ponds to withstand major earthquakes and floods.

Remove tailings piled along the Mill-Willow bypass, which routinely poisons fish during summer rainstorms (or divert Mill and Willow creeks into Pond 3 for treatment, as per Alternative 3).

Shore up the ponds and remove the Mill-Willow tailings by 1990.

View the proposed cleanup as a temporary solution to protect the river and the human and non-human occupants while mines and mine tailings upstream are cleaned.

"Aggressively pursue" the designation of an in-state toxic waste dump and the development of technology that mine metals from wastes.

Bring up water quality below the Warm Springs Ponds to meet state standards even during floods.

Remove tailings and pollution sources along the Mill and Willow creeks.

To reiterate my views on the Warm Springs cleanup:

I favor Alternative 2 because it is the plan which will best protect the Clark Fork valley and its inhabitants.

However, Alternative 3 (the Preferred Alternative) can be modified so that it will offer adequate protection to the Clark Fork valley and its inhabitants, if:

1.) The Warm Springs Ponds system is protected from the MCE and the PMF.

2.) An 8,000 acre-feet upstream impoundment is constructed to hold floodwaters and to serve as a conventional sedimentation basin.

3.) Water quality below the Warm Springs Ponds meet state standards even during floods.

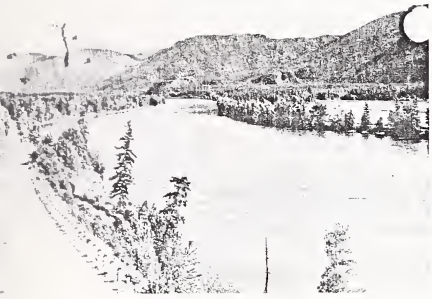
4.) Steps are taken to prevent further contamination by removing contaminants from Mill and Willow creeks and the Mill-Willow bypass.

Thank you for your time and consideration. I appreciate the efforts being made by state and federal officials to include the public in the decision-making process.

Sincerely,

FWRives

Frank W. Rives
December 23, 1989



City of Clark Fork
CLARK FORK, IDAHO 83811

Site_____
File #_____
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Admin. Record. Yes_____ No_____
Key Words/Comments:_____

RECEIVED
DEC 27 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 20, 1989

Solid and Hazardous Waste Bureau
Montana Department of Health and Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Bureau Staff:

Although the Clark Fork River is primarily in Montana, we Idahoans must live with many of its problems. Around 90 percent of the annual recharge of Lake Pend Oreille comes from the river, so we who live, work and recreate around the lake are concerned with all decisions that affect the quality of the Clark Fork. Decisions involving the Superfund sites on the upper river are of critical importance to us because they will profoundly affect water quality in the Clark Fork, and thus Lake Pend Oreille, for centuries.

Correcting problems at the Warm Springs Ponds is especially crucial because of their importance as a safety valve that helps keep mining pollutants from migrating downstream. We strongly recommend the EPA and health department adopt an alternative from its ponds feasibility study that ultimately leads to permanent elimination of pollution from the study area.

The agencies should:

- adopt an alternative that combines raising the pond dikes and constructing an upstream impoundment for handling flood flows;

- ensure the ponds and all upstream impoundments are bolstered to withstand major floods and earthquakes, and include design criteria that guarantees flood waters are effectively treated before being discharged from the pond system;

- ensure tailings are removed from the Mill-Willow bypass, and if it is to be used for Mill and Willow Creek discharges, that the pollution sources of those creeks be eliminated;

- guarantee that water discharged from the ponds up to at least a 100-year flood event meet state water quality standards;

- recognize that this feasibility study does not include a permanent cleanup solution, but instead prescribes stopgap measures that ensures the ponds are stable and working and that fish kills will be reduced so that Superfund can concentrate on upstream pollution sources;

- analyze in detail engineering alternatives for eventual removal of all wastes from the floodplain, including studying metal removal technologies and siting of local permanent repository.

The Lake Pend Oreille area offers a quality of life matched by few areas in the West. People come here because of the lake's preminum water quality, recreation and fish. But aside from the amenities, the lake is the hub for a bustling tourism and services industry. It also attracts outside investors and is bolstered by a transfer-fund economy, largely represented by retirees. Tourism is Idaho's second largest industry, accounting in 1988 for nearly 5.5 million jobs with an annual payroll of $6.5 billion. According to a 1988 state report, tourism accounts for more than $1.2 billion in expenditures in Idaho. The Idaho Panhandle and especially the Lake Pend Oreille area, contribute a large chunk of those expenditures and jobs.

To maintain this economic vitality we must maintain the water quality of Lake Pend Oreille. And that means maintaining and improving the quality of the Clark Fork River. Please keep that in mind as decisions are made for the Warm Springs Ponds and other upper basin Superfund sites.

Sincerely,

Clark D Cowley

Clark Cowley
Mayor

Site
File
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

MONTANA STATE AFL-CIO
APRIL 29 1956

JAMES W. MURRY
EXECUTIVE SECRETARY

110 WEST 13TH STREET
P.O. BOX 1176
HELENA, MONTANA 59624
(406) 442-1708

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DEC 28 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 27, 1989

Janie Stiles
State Superfund
c/o Montana Department of Health and Environmental Sciences
Room B201
Cogswell Building
Helena, Montana 59620

Dear Ms. Stiles:

On behalf of the Montana State AFL-CIO, I want to take this opportunity to comment on the proposed Warm Springs Superfund site plan recovery project.

The danger which the current situation poses to human health and environmental conditions in the area is unacceptable. The Silver Bow Creek site has been on the Superfund National Priority List since 1983, and yet, none of the elements necessary to clean up this area has begun. The consistent fish kills in the area are credited to the contaminants from the Warm Springs Ponds and the potential for catastrophic flood or earthquake damage increases with each passing day.

As an organization, the Montana State AFL-CIO has consistently maintained a responsible environmental record. We believe that the work to begin the proper clean-up of this area is long overdue. The concerns that have been expressed encouraging a more complete recovery program also have merit, but the clean-up should not be delayed any further while waiting for refinement of the plan.

We believe that the clean-up will provide needed jobs for area workers and start the journey toward a clean, healthy environment. We support the comments of the Montana Operating Engineers and Associated General Contractors Joint Apprenticeship Training Program with regard to contractor and employee requirements as listed in 29 CFR Part 1910; payment of prevailing wage and certified employee payrolls; and the need to use locally trained and qualified people to remedy the situation.

We appreciate the opportunity to comment on this project.

Sincerely yours,

James W. Murry, Executive Secretary
Montana State AFL-CIO

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Site
File #
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Admin. Record: Yes No
Key Words/Comments:

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DEC 28 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

18 Redwood Drive
Butte, Montana
December 27, 1989

Ms. Janie Stiles
c/o Montana Department of Health and
Environmental Services
Room B201, Cogswell Building
Helena, MT 59620

Subject: Warm springs Ponds Proposed Plan

Dear Janie,

After attending the recent meeting at Montana Tech, I took some moments to review the alternates proposed by the State, and was also able to get a copy of the ARCO Plan for review. I would like to provide the following comments.

I am not in favor of constructing a new upstream pond as proposed in the Preferred Alternate 3. Use of additional land to construct another holding pond is bad enough, but my main objection is the proposed wet/dry usage. I know, the sludge collected during floods is to be cleaned out between floods so that it will not blow around during the dry season, but it is much simpler to manage such a facility if left wet. Removal of this type of material is no easy task, wet or dry. The ARCO proposal of increasing the storage capacity of the existing ponds is much more direct, avoids the use of additional land, and allows wet management.

Although I have not studied the detailed engineering documents prepared by any of the parties, the summary documents indicate the ARCO plan would handle a much larger flood volume before flood waters had to be shunted to the bypass.

As in all studies of this type, there is no right or wrong, but in my review of the documents, the plan proposed by ARCO has some very strong points which should merit consideration in the final plan.

During the hearing some large metal concentrations were cited when questions were asked about the concentrations of the sludge. Some were certainly high enough to suggest recovery rather than capping. When the first ponds were constructed most tailings had higher metal values than todays ores. I'm sure this has been considered, but the possibility should be reviewed before the final plan is cast.

Very truly yours,

Sam Worcester

Samuel A. Worcester

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AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Fish and Wildlife Enhancement
Federal Bldg., U.S. Courthouse
301 S. Park, P.O. Box 10023
Helena, Montana 59626

IN REPLY REFER TO:

10,111-Silverbow

December 28, 1989

Site_____
File #_____
Co[illegible] File: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

Kathy DeMarinis
State Project Officer
Department of Health and Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, Montana 59620

Dear Ms. DeMarinis:

In response to your request, we have reviewed the Proposed Plan and Feasibility Study for the Warm Springs Ponds Operable Unit of the Silverbow Creek Superfund Site located northwest of Butte, Montana. Our comments pertaining to these documents are limited to technical fish and wildlife resource issues related to the identified cleanup alternatives. We offer these comments and suggestions so that environmental issues are considered during the decision making process used to select a remedial action for this site. These comments are being provided on a technical assistance basis only and do not constitute the U.S. Department of the Interior's position concerning possible damages to natural resources under its trusteeship as defined in the National Contingency Plan and the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986.

As background to the following general and specific comments pertaining to the development of alternatives that address contaminant remediation at the Warm Springs Ponds Operable Unit, it is important to note that there are extensive fish and wildlife habitats in the general vicinity of the site. Therefore, remedial alternatives should identify potential impacts to fish and wildlife habitats and thoroughly evaluate the feasibility of avoiding or minimizing impacts and the costs of mitigating unavoidable impacts. Remedial actions that have the potential to impact fish and/or wildlife habitats should be implemented cautiously, monitored closely, and have the flexibility to accommodate the uncertainties inherent with the current level of knowledge.

General Comments

The Feasibility Study for the Warm Springs Ponds Operable Unit of the Silverbow Creek Superfund Site identified four site-related contaminant problems (pond bottom sediments, surface water, tailings deposits and contaminated soils, and groundwater) and developed 12 detailed media-specific actions from which combinations of these actions were assembled into seven cleanup alternatives. We have focused our comments on evaluating the alternatives in terms of their effectiveness in preventing contamination of the Clark Fork River (i.e. migration control) and reducing the potential for

environmental toxicological impacts in and around the Warm Springs Ponds Unit. In general, all of the alternatives rely on passive treatment of contamination, such as settling basins, rather than incorporation of more intensive water treatment measures, such as neutralization of acidic waters, to reduce the toxicity of heavy metals to aquatic organisms. While passive treatment may afford adequate protection during low and normal flow situations, there seems to be a continued hazard to aquatic organisms during high flow events as a result of acute exposure to acidic waters that may contain elevated and potentially toxic concentrations of dissolved metals. We recommend that the feasibility of implementing periodic lime treatment of acidic water during high flow conditions be explored further.

Risk-based cleanup goals for soil remediation at the site are based on human health criteria for arsenic and lead. Development of soil cleanup goals for cadmium, copper, and zinc based on bioavailability potential and subsequent aquatic life exposure scenarios were not considered. If contaminated soil excavation is based only on arsenic and lead levels, it is possible that tailings containing excessive levels of copper, cadmium, and/or zinc would not be removed and continue to pose a risk to aquatic resources.

All alternatives, except the No Action Alternative, will result in major modification of the Mill-Willow Bypass, but the Feasibility Study does not identify possible measures or explore the feasibility of reconstructing or configuring the bypass to improve fisheries habitat or further reduce the migration of contaminants to the Clark Fork River.

Specific Comments

Pg. 2-30; Line 17-"Seven samples...": While none of these samples exceeded concentrations established to determine EP Toxicity, the hazard that these tailings areas above Pond 3 and below Pond 1 pose to aquatic resources should be evaluated using bulk sediment and elutriate bioassay testing. The use of these methodologies might also be useful in determining the extent of tailings excavation required to reduce the risk that these tailings pose to aquatic resources.

Pg. 2-27; Figure 2-11: This figure indicates that a large proportion of the copper loads are in the form of acid soluble copper complexes. On page 2-65 it is stated that higher dissolved metals correlated with low pH. Therefore, the importance of offsetting low pH inputs into the operable unit and the Clark Fork River should not be underestimated in the development of media-specific actions for this site.

Pg. 3-51; Risk-Based Cleanup Goals: This section does not assess the risk posed by soils or sediment to aquatic life. Exposed soils within this operable unit have elevated levels of copper and zinc that can be readily mobilized by precipitation and result in the exposure of aquatic life to potentially harmful concentrations. If the excavation of soils is based solely on their arsenic and lead concentrations, soils containing excessively high levels of copper and zinc may not be removed and would continue to pose a hazard to aquatic life.

Pg. 4-22; Table 4-1: This table indicates that reduced pH is an important factor in mobilizing copper and zinc into a dissolved state that is toxic to fish. If water treatment to raise pH would have been implemented for only a two hour period the severity or possibly the occurrence of a fish kill would have been avoided. Even if the tailings are removed from the Mill-Willow Bypass, storm events could result in pH depressions that will cause heavy metal bioavailibility from upstream sources and possible fish mortality. We recommend that the Feasibility Study examine options for buffering low pH during storm events.

Pg. 5-15; Table 5-2, Objectives 2 and 5: Including a general response action to buffer acidic pH would address both the problem of fish kills and the problem of heavy metal migration to the Clark Fork River.

Pg. 6-32; Media 2-Surface Water, Problem 3 (Fish Kills) and Problem 6 (Transport of Upstream Tailings): We recommend that post excavation neutralization of surface water by means of lime treatment be incorporated into the media actions for surface water. For instance, added protection would be afforded to downstream resources during high flow events and the possibility of untreated contaminated water reaching the Clark Fork River would be reduced by incorporating water neutralization treatment capabilities into either the flood impoundment, a smaller settling basin, or at other critical points within the operable unit.

Pg. 7-1; Line 21: As noted above, we recommend that target cleanup levels for tailings deposits and contaminated soils also include criteria for copper and zinc because of the hazard these elements pose to aquatic resources.

Pg. 7-21; Media Specific Action 4: This action will basically result in the total reconstruction of the Mill-Willow Bypass. During the design phase, we recommend that optimizing fisheries habitat be a major component of the reconstruction criteria.

Pg. 7-24; Media Specific Action 5A-Overall Upgrade of the Pond Treatment Facility: Considering the goal of this media-specific action is to improve the efficiency and capacity of the treatment system, we question why the construction of a new pond south of the wetted area of Pond 3 and interconnected to the existing wet areas of Pond 3 was not considered as a component of this action. We offer the suggestion of adding a new treatment pond as part of this action for the following reasons: 1) the extensive modification proposed for the inlet structure could be reduced; 2) channelization of Silverbow Creek within the dry areas of Pond 3 would be incorporated into the new pond excavation; 3) excavation of contaminated soils and tailings within this area is already being proposed as part of another media-specific action; and 4) the capacity of the pond treatment facility would increase by 70%.

Pg. 7-51; Media-specific Actions 6A & 6B: We recommend that the feasibility of providing neutralization treatments to runoff volumes entering and/or exiting the storage impoundments be examined.

Pg. 7-70; Line 24-Removal of contaminant bearing particulate material based on particle size: There is an inherent assumption throughout the Feasibility Study that the settling of larger size sediment particles during flood events will greatly reduce the migration of heavy metals and their potential toxic effects. We have some concerns with this assumption. Estimates of particulate removal is on a weight basis (80% removal in the upstream basin). However, the quantity of heavy metals adsorbed onto sediment is probably more closely correlated with the amount of surface area of the particle. On an equal weight basis, small particles have more surface area than large particles. Therefore, the 20% (weight basis) of the sediment that continues downstream may still be carrying substantial contamination downstream. This situation is compounded by the acidic nature of the flood water which will cause the heavy metals to desorb from the suspended particles and become bioavailable to aquatic organisms. We recommend that migration of contaminants via suspended sediment and the potential sediment toxicity to aquatic organisms be evaluated more thoroughly.

Pg. 7-82; Media-specific Action 9: As stated earlier, we recommend that copper and zinc action levels be developed to determine the applicable areas that require excavation.

Pg. 7-87; Wetlands Treatment: We believe the risks outweigh the benefits of developing wetlands below Pond 1 to store contaminated groundwater for the following reasons: 1) Heavy metals do not biodegrade. Therefore, the groundwater contamination will be converted to surface contamination in the wetland. Thus, rather than reducing the areal extent of contamination within the operable unit, this action would re-contaminate areas that had just undergone remediation as a result of excavation and removal actions. 2) Considering the time required to establish a productive wetland, the subsequent difficulty of periodic removal of contaminated vegetation from a functioning wetland and the associated physical disturbances of the wetland, the potential of this action improving wildlife habitat appears low.

Pg. 8-7; Line 16-Waiver of the ambient water quality standard for mercury: As an additional appropriate mechanism for determining whether mercury is adversely affecting the environment within the Warm Springs Ponds or Clark Fork River, we recommend that the tissues of fish from Pond 3 be periodically analyzed for mercury and other heavy metals to determine if the selected remedial action is reducing the threat that these substances pose to public health and the environment.

Pg.8-27; Line 10: "To mitigate these potential impacts, consultation with state and federal agencies" for the purpose of developing and implementing environmental restoration plans "will be required." In our opinion, the implementation of any of the alternatives will result in substantial environmental impacts. Avoiding, minimizing, or mitigating these impacts should be key considerations in the development of a remedial design and action.

Pg. 8-115; Line 15-"Environmental impacts...": This section fails to discuss the possible impacts to fishery resources and/or aquatic habitats in and

around the operable unit that might occur as a result of implementing an alternative.

Appendix A; Pg. 7-1&2: The toxicity assessment for aluminum does not evaluate the toxicity of aluminum to aquatic life as a result of the interaction of low pH and aluminum. Recent studies reported in the scientific literature indicate that this interaction may pose a significant hazard to aquatic fauna at concentrations similar to those reported in Table 3-13 of Appendix A.

Appendix A; Pg. 7-8; Line 42-"Freshwater fish vary in their sensitivity...": The sensitivity of aquatic life to copper exposure also varies significantly based on water quality characteristics such pH and alkalinity.

Summary

In conclusion, we would encourage that a mixture of the media-specific actions assembled in Alternatives 1-3 and a media-specific action to address pH depressions associated with high flows be formulated into an alternative that could be evaluated against the seven criteria prescribed by the U.S. Environmental Protection Agency. Specifically, based upon our review of the available information, the combination of media-specific actions that we believe would provide overall protection of the environment, comply with ARARs, reduce toxicity and mobility, and be effective in providing remediation of contamination at the Warm Springs Ponds Operable Unit would include:

1. Construction of an upstream settling basin that would include lime treatment of influent and/or effluent low pH waters passing through the basin during high flow events.

2. Removal and disposal of contaminated soils from along the Mill-Willow Bypass. Reconstruction of the bypass in such a manner as to include fishery habitat improvements and limestone soil amendments to provide additional treatment during high flow situations.

3. Excavation of tailing deposits and contaminated soils (based on arsenic, copper, lead, and zinc cleanup goals) from all applicable areas below Pond 1 and above Pond 3 and disposal on-site (Pond 1).

4. Overall upgrade of the Pond Treatment System.

    A. Construct a new treatment pond that would be linked to the existing Pond 3 (i.e. a two pond treatment system).
    B. Divert Mill and Willow Creeks into the new treatment pond.
    C. Improve the inlet structure that would be located at the point of the new treatment pond shown in Figure 7-4 of the Feasibility Study.
    D. Improve the lime addition system.
    E. Construct a new effluent structure for Pond 3 that has lime addition capability.
    F. Remove Pond 2 from the treatment system, but keep the contaminated tailings in Pond 2 flooded.

5. Stabilization of pond berms to withstand potential floods or earthquakes.

6. Treatment of groundwater by collecting groundwater below Pond 1 and pumping the contaminated water into Pond 3.

We appreciate the opportunity to provide comments on the Feasibility Study for the Warm Springs Ponds Operable Unit of the Silverbow Creek Superfund Site. If we can be of further assistance or you have any questions concerning our comments, please contact Don Palawski of my staff at 449-5225.

Sincerely,

Donald Palawski
For Kemper M. McMaster
Field Supervisor
Montana-Wyoming Field Office

cc: Scott Brown, USEPA, Helena, MT
Regional Environmental Officer, OEPR, DOI, Denver, CO
ARD-FWE, Region 6, FWS, Denver, CO (Attn: Tom Jackson-Mail Stop 60153)

Site
File
Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

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JAN 02 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Solid and Hazardous Waste Bureau
Montana Department of Health and Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Bureau Staff:

Although the Clark Fork River is primarily in Montana, we Idahoans must live with many of its problems. Around 90 percent of the annual recharge of Lake Pend Oreille comes from the river, so we who live, work and recreate around the lake are concerned with all decisions that affect the quality of the Clark Fork. Decisions involving the Superfund sites on the upper river are of critical importance to us because they will profoundly affect water quality in the Clark Fork, and thus Lake Pend Oreille, for centuries.

Correcting problems at the Warm Springs Ponds is especially crucial because of their importance as a safety valve that helps keep mining pollutants from migrating downstream. We strongly recommend the EPA and health department adopt an alternative from its ponds feasibility study that ultimately leads to permanent elimination of pollution from the study area.

The agencies should:

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To maintain this economic vitality we must maintain the water quality of Lake Pend Oreille. And that means maintaining and improving the quality of the Clark Fork River. Please keep that in mind as decisons are made for the Warm Springs Ponds and other upper basin Superfund sites.

Sincerely,

Louise Colwell

President of Council

CITY OF HOPE
P. O. BOX 277
HOPE, IDAHO 83836

Site_____
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Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
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MONTANA DEPARTMENT OF HEALTH
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SOLID & HAZARDOUS WASTE BUREAU

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Sincerely,

Elora L. Yarjan, Mayor
for the East Hope City
Council

SANDPOINT IDAHO USA

File #
Comp. Rel. Yes No
Admin. Rec'd. Yes No
Key Words/Comments:

RECEIVED
JAN 02 1990
MONTANA DEPARTMENT OF HEALTH
& ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 29, 1989

Solid and Hazardous Waste Bureau
Montana Department of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Bureau Staff:

We at the Sandpoint Chamber of Commerce have long been concerned with the quality of the water in Lake Pend Oreille. As you know, that water quality is directly impacted by the Clark Fork River which contributes about 90% of the Lake's water each year.

We want to be sure that problems at the Warm Springs Pond are corrected so that pollutants from mines do not migrate downstream and eventually into Lake Pend Oreille. We recommend that the EPA and health department adopt an alternative from its ponds feasibility study that ultimately leads to permanent elimination of pollution from the study area.

The agencies should:

1) adopt an alternative that combines raising the pond dikes and constructing an upstream impoundment for handling flood flows;

2) ensure the ponds and all impoundments are bolstered to withstand major floods and earthquakes;

3) ensure tailings are removed from the Mill-Willow bypass;

4) guarantee that water discharged from the ponds up to at least a 100 year flood event meet state water quality standards;

5) recognize that these are stopgap measures while the Superfund concentrates on upstream pollution sources;

6) analyze alternatives for removing all wastes from the floodplant.

P.O. BOX 928 SANDPOINT, IDAHO 83864 208-263-2161

The quality of Lake Pend Oreille is critical to the health of our local tourism industry; an industry which employes one out of every three people in Sandpoint. We ask that you adopt these measures so that our Lake can be kept free of upstream pollution.

Thank you for your attention.

Sincerely,

Chuck Bauer
President

Site
File #
Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

RECEIVED
JAN 03 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Anaconda Chamber of Commerce
306 E. Park Anaconda, MT 59711 Phone (406) 563-2400

January 2, 1990

Janie Stiles
MT. Dept. of Health and Environmental Sciences
Room B 201
Cogswell Building
Helena, MT 59620

RE: WARM SPRINGS PONDS

Dear Ms. Stiles:

The Anaconda/Deer Lodge County Chamber of Commerce is very concerned about the State of Montana, Department of Health and Environmental Sciences handling of the plan for the Warm Springs Ponds.

The Anaconda/Deer Lodge Chamber is particulary concerned with the Department's lack of cooperation in working with the residents of the area and the Anaconda/Deer Lodge County Local Government.

The Anaconda Chamber of Commerce has the following concerns regarding the proposed plan:

1. The location of the said pond to the south of Opportunity directly poses a threat to the Opportunity Community. There exists a direct threat of ground water contamination and water well pollution.

2. The State neglected to conduct any tests regarding what affect locating the ponds in the Opportunity area will have regarding potential ground and well water contamination.

3. The construction of the proposed impoundment effectively creates more nonproductive waste land in Anaconda/Deer Lodge County, which would eliminate development of this area to further impact our economy.

4. The plan is financially detrimental to the County by removing private property from an already shrinking tax base.

5. The lack of concern regarding the potential unsightliness of the ponds which would be located adjacent to I-90, the gateway to the Pintlers causing loss of tourism revenue.

6. No public input regarding the plan was sought from the citizenry of Anaconda/Deer Lodge County.

7. No input regarding the plan was sought from the Anaconda/Deer Lodge County governmental representatives.

8. Continued requests by the Anaconda/Deer Lodge County Governmental officials for a copy of the States plan fell on deaf ears. The Department would not supply local government representatives with the requested copy of the plan another example of the arbitrary and capricious manner in which the State has attempted to quietly effectuate this plan.

The Anaconda/Deer Lodge County Chamber of Commerce is greatly concerned with the irresponsible manner in which the State and particulary the Department of Health and Environmental Sciences has attempted to formalize this plan.

We encourage the State of Montana, Department of Health and Environmental Sciences to work with the citizens and local government officials of Anaconda/Deer Lodge County when making decisions that will directly affect their county and citizens financially as well as potentially affecting the quality of life.

Sincerely,

Timothy W. McKeon, President

cc: Governor Stan Stevens
John Wardell
Gene Vukovich
Representative William Menahan
J.D. Lynch
Bob Pipinch
Rob Blotkamp
John Yates/The Anaconda Leader
Dave Kirkpatrick/The Montana Standard
W.R. Williams/ARCO Caal Co.

SKYLINE SPORTSMEN'S ASSOCIATION, INC.

P. O. BOX 173 BUTTE, MONTANA 59701

RECEIVED
JAN 04 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

December 20, 1989

Janie Stiles
Montana Department of Health
and Environmental Sciences
Room B201
Cogswell Building
Helena, Montana 59620

To Whom It May Concern:

The Skyline Sportsmen's Club of Butte would like to inform you that we are in favor of the ARCO plan to clean up the Warm Springs Pond System.

Our primary reasons for supporting the ARCO proposal are because of the enhanced fishery and spawning areas, as well as the increase of wetlands and waterfowl rearing areas. Our club would like to continue to work with ARCO on these projects in an advisory capacity, along with the National Ducks Unlimited personnel. (Enclosed is Waterfowl Productivity Census).

The club was disappointed to see $750,000 awarded to the Bozeman firm, Schafer and Associates. This ARCO money should have been spent on actual projects, not more studies. There are numerous projects in place on the Opportunity ponds which are good examples to follow.

ARCO should adhere to State water quality standards below the ponds during high, slow periods, as well as confirm pollution data on Mill and Willow Creeks. These safeguards would further help protect the lower river during flash floods and unseasonally high stream flows.

Your assistance in addressing our clubs concerns will be greatly appreciated.

Respectfully,

Tony Schoonen, Secretary

Sherry Petrovich-Staedler
ANACONDA-DEER LODGE COUNTY ATTORNEY
COURTHOUSE - 800 SOUTH MAIN
ANACONDA, MONTANA 59711
(406) 563-8421 EXT. #235

December 15, 1989

Gene Vuckovich
City-County Manager
Anaconda-Deer Lodge County
Anaconda, MT 59711

RE: Warm Springs Ponds Feasibility Study

Dear Gene:

I have reviewed parts of the lengthy Feasibility Study. It was not practical for me to review the entire document due to it's length. I have several concerns about the plan, but overall I am encouraged to see movement toward actual cleanup. Either the state plan or the ARCO plan will lead to a much improved and safer situation with Warm Springs Ponds. However neither will be a permanent remedy.

The following lists several concerns I have with the Feasibility Study.

1) An upstream impoundment area may well be necessary to preserve the integrity of the ponds and of the Clark Fork River. However the RI/FS fails to analyze the effects of an impoundment area on Opportunity and also fails to study alternate sites. The effects on Opportunity may include groundwater contamination, loss of productive agricultural land, decreased property values, and dust from settled out sediments. The RI/FS fails completely to analyze any of the effects or to consider whether other sites further away from inhabited communities are feasible. Protection of the Clark Fork is important, but don't degrade Opportunity to achieve this noble goal.

2) Both the ARCO plan and the state RI/FS fail as a permanent remedy because they propose to leave all of the contaminated sediments in the pond area. It would be preferable for a RCRA approved and permitted facility to be built out of the flood plain to permanently hold the contaminants. This should not be done until the upstream sources of heavy metals pollution have been cleaned up, so that it only needs to be done once. Therefore the RI/FS is appropriate as an interim remedy. The ponds themselves should not be considered

permanent.

3) The state RI/FS contains several assumptions that may be incorrect;

A) The RI/FS assumes that there will not be a simultaneous flood on Warm Springs Creek and Silver Bow Creek. If there were such a flood, the Pond 1 berm could be inundated and destroyed causing a disastrous release of sediments into the Clark's Fork River. A simultaneous flood is quite possible given the similar weather patterns in both drainages.

B) The RI/FS eliminates removal of sediments as a remedy due to excessive cost. One of the seven alternatives studied should have been removal of sediments and storage in a local RCRA approved facility.

C) The RI/FS should have studied an alternative similar to ARCO's plan. Since ARCO released it's plan independantly, there is no easy way to fairly compare costs, etc. The ARCO plan uses different assumptions than the state plan; for example ARCO projects less water in a 100 year flood than does the state; although neither includes Warm Springs Creek in their flood projections.

4) Mill-Willow Creek should be allowed to continue flowing into the Clark's Fork without being routed through Warm Springs Ponds most of the year. A weir could be installed that can divert the flow of Mill-Willow Creek into the ponds during high water. This should be done only if studies clearly show high levels of contamination in Mill-Willow Creek. By allowing the waters to flow in the fall, a brown trout spawning area can be established. A weir would also allow the waters to be diverted while the streamside tailings are removed and sealed in Pond 1, as proposed in the state RI/FS.

5) It should be noted that there are many good proposals in the state and ARCO plans. Strengthening the pond berms, monitoring and pumping polluted groundwater, and removing contaminated tailings from the Mill-Willow Bypass are common strong points of both plans.

Finally, I believe the Commission should call attention to the state's failure to fully involve Anaconda in the Ponds review process. Better scoping of alternatives should have included local hearings prior to release of the RI/FS. The state's refusal to provide even one copy of the complete RI/FS to the city-county government can only be described as shortsighted. (The copy of the RI/FS that I obtained was from the Reclamation Advocates.) Since the state plan calls for spending $62.5 million to remedy a hazardous waste problem in Anaconda-Deer Lodge County, one would expect more coordination and cooperation with local government. The city-county government should make it clear to the state that we expect and demand more participation in the cleanup of our area.

Sincerely,

Michael Grayson
Deputy County Attorney

MBG/bv

Edgar W. Butler
2210 38th St. 7
Missoula MT 5980.

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JAN 09 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Comments on Warm Springs Ponds
Proposed Plan

I do not believe the preferred alternative adequately addresses the cleanup of the Warm Springs Ponds. Halfway measures are presented by this alternative which if implemented would be at best a temporary, risky approach to cleanup. The following are some of the problems I see in preferred alternative 3.

First, I don't think the preferred alternative takes into account the real possibility of a probable maximum flood occuring at the site. Such an event would be catastrophic if it should cause the berms surrounding the ponds to fail and allow tons of contaminated sediments to be washed down river. Just because the preferred alternative meets the letter of the law in regards to State berm and dam requirements does not mean that the environment will necessarily be protected by following those requirements. Perhaps in a smaller pond with fewer cubic yards of contaminated sediments such regulations might suffice. The effects of dam or berm failure would not be overwhelmingly great. However, the Warm Springs Ponds

are quite large with vast quantities of contaminated sediments. Should these contaminates escape in a flood, the consequences would be devestating

Second, I believe the 2000 acre-feet upstream settling basin in the preferred alternative is inadequate. The 8000 acre-feet upstream settling pond in alternative 1 and 2 would be much more effective since they allow full treatment up to the 100 year flood.

Third, contaminated soils and exposed tailings should be disposed of off site, out of the flood plain rather than in an excavated pond. Given time, contaminated soils and tailings will migrate into the river if left on the flood plain.

Thanks for considering my comments.

Sincerely,

Edgar W Butler

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JAN 09 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Janie Stiles

As a former resident of Millcreek, & now a resident of Opportunity, I can not believe the State is even considering contaminating more Property.

Not only am I a resident, but also would live right across the Highway from the "Pond" you propose.

I believe there is plenty of ground over by the other ponds, that with some work the whole mess could be in one area, & not contaminating our property or water.

I hope there is a lot more

studying & testing before a decision is made -

Sincerely,

Peg Patterson
1110 Smith St
Anaconda Mt
59711

P.S. We have only lived here since Aug 1988, & not ready for another upset -

ANACONDA
LOCAL DEVELOPMENT CORPORATION

P.O. BOX 842
ANACONDA,
MONTANA 59711
TELEPHONE (406) 563-5538

RECEIVED
JAN 10 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 9, 1990

Janie Stiles
Montana Department of Health & Environmental Sciences
Room B 201
Cogswell Building
Helena, MT 59620

RE: **WARM SPRINGS PONDS**

Dear Ms. Stiles:

The Anaconda Local Development Corporation is concerned about the State of Montana, Department of Health and Environmental Science's plan for the Warm Springs Ponds.

ALDC is particularly concerned with the Department's procedures in working with the residents of the area and the Anaconda/Deer Lodge County Local Government.

ALDC has the following concerns regarding the proposed plan:

1. No public input regarding the plan was sought from the citizenry of Anaconda/ Deer Lodge County and it's governmental representatives' continued requests for a copy of the State's plan were ignored as the State attempted to quietly effectuate this plan.

2. The location of the proposed pond to the South of Opportunity poses a threat of ground water contamination and water well pollution to the Opportunity community.

3. The potential unsightliness of the ponds located adjacent to I-90, the gateway to the Pintlers, causing loss of tourism revenue does not seem to be a concern in the plan but is for the community of Anaconda.

4. The proposed impoundment not only creates more nonproductive wasteland in Anaconda/ Deer Lodge County, but eliminates development and continues to impact our economy.

5. The proposed plan rejects out-of-hand other possible solutions which may be more environmentally viable when all aspects are considered.

Anaconda Local Development Corporation is greatly concerned with the manner in which the State developed and proposed the plan.

We encourage the State of Montana, Department of Health and Environmental Sciences to work with the citizens and local government officials of Anaconda/Deer Lodge County when making decisions that will directly affect the quality of life and the financial viability of its citizens.

Respectfully,

James H. Davison
Executive Director/Manager

JHD:re

cc: Governor Stan Stephens
John Wardell
Gene Vuckovich
Senator J. D. Lynch
Senator Bob Pipinich
Representative William Menahan
Representative Rob Blotkamp
W. R. Williams, Arco Coal Company

8.2 Kenneth Bender
20200 Smokey RD
Frenchtown, MT.
59834
(406) 626-4756

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JAN 10 1990
MONTANA DEPARTMENT OF HEALTH
SOLID & HAZARDOUS WASTE BUREAU

1/10/90

Montana Dept. of Health and Enviromental Sciences:

I am writing this letter to adress the Warm Springs Ponds Clean-up project. It is clear to me that much thought and study has gone on in development of the various alternatives. Yet, even though many individuals, groups, departments, businesses and governments have all been involved in the pond analysis—the preferred alternative does not seem justified because it appears to be inadequate.

Although alternative #3 does adress all aspects of the clean-up in some degree—I do not feel that less than maximum in any phase of the clean-up effort is really acceptable or sensible to those of us living in the Clark Fork Basin.

The basic issue here is clean water. IF it is clean water we want, then it is clean water we should get... and maintain on a permanent basis. Although it may appear acceptable and logical to spend $62 million now for isolation and collection of dangerous tailings, why should we at the same time allow the building of an upstream settling basin—that will not continually protect against PMF? This aspect of alternative #3 seems

contradictory.

If we are going to spend large sums of money on cleaning-up, why leave ourselves open to future hazards with groundwater pollution? I like the idea of leaving the wetlands undisturbed, since they are contained anyhow, and I may be accepting of placing local tailings in Pond I with a cap and revegetation, but anything less than complete upgrade and processing of Silver Bow Creek water with a more capable settling system, as well as an upstream settling pond (basin) capable of handling all water at all times is foolish. Maybe no floods are in the forecast but who knows when there will be one? If we go ahead with alternative #3 and we have a major flood - the chance of creating more waste sites downstream are extremely probable. In this case, the whole project would look foolish.

It seems like there is an alternative between #2 & #3. Since removing tailings and depositing them in Pond #1 as opposed to removing them to Boise, Idaho should save considerable dollars, why can't a fully capable upstream basin be created?

Alternative #2 calls for 250 millions, alternative #3 calls for 62 million; may be alternative #2A should be 120-150 million?

In conclusion we must protect in the best manner possible against future groundwater pollution. It is so obvious that toxic groundwater cannot be dealt with once it exists. We cannot afford ~~@~~ anymore degradation of our states aquifers if we are to be able to continue living and enjoying raising our families in this area of the country. If we continue to allow further degradation of the Clark Fork River basin groundwater, situations like Milltown will continue to occur. We must eliminate the problem of river and groundwater pollution once and for all, to ensure healthy and sustainable living standards for future generations.

Sincerely,

K A N B

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JAN 15 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

JAN. 11, 1990

DEAR SIRS,

AS A 20 YEAR RESIDENT AND PROPERTY OWNER IN OPPORTUNITY, I AM CONCERNED AND OPPOSED TO THE PLANNED POND TO BE CONSTRUCTED IN THE AREA SOUTH OF OUR FAIR COMMUNITY.

THIS POND WOULD NOT ONLY POLLUTE MORE LAND AND WATER BUT WOULD POSSIBLY RAISE THE WATER LEVEL IN A SYSTEM THAT IS ALREADY TAXED TO THE LIMIT.

I AM DEFINITELY OPPOSED TO THIS PLANNED POND.

SINCERELY

STANLEY G. GLOVANOVA
202 N DIXON
OPPORTUNITY, MT.

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JAN 15 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

84

Jan 8, 1990

Ms. Janie Stiles
c/o Montana Department of Health + Environmental Science
Rm. B 201, Cogswell Building
Helena, MT 59620.

Dear Ms. Stiles:

By this letter I wish to reiterate one of the points made in my previous letter and a point made at the public hearing held in Anaconda, Montana. That point being that the purpose of the clean up in this area would best be served by cleaning up the problem at the source in Butte rather than an upstream impoundment as has been proposed.

I sincerely hope that all these letters and input will be taken into consideration since the general concensus in this area is that the mess should be cleaned up in Butte first. This feling is reflected by the City-County Manager, County Commissioners, Chamber of Commerce, as well as the majority of people in Anaconda. Not just by the community of Opportunity.

Thank you so much for your time.

Sincerely,

Robin M Richards
202 Erickson, Opportunity
Anaconda, MT 59711

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JAN 15 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

85

Jan. 12, 1990

Janie Stiles

I am writting to you in response to the Silver Bow Creek Superfund Site Reports that I have heard about.

I am very much against having another pond being put in and more good land being lost to pollution.

the only way clean up can be done is to Stop the contaminants at Butte, and to clean up the Stream Bed from there to the Ponds. Then there would be no more contaminants to go into the Clark Fork River. Clean it up for good and go for reclamation of Silver Bow Creek and the Clark Fork River.

Thank you for reading my comments

Sincerly
Jack L. Duffield

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

STAN STEPHENS, GOVERNOR

COGSWELL BUILDING

STATE OF MONTANA

FAX # (406) 444-2606

HELENA, MONTANA 59620

Dec. 5, 1989

RECEIVED
DEC 12 1989
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Millie Mathews
Opportunity
Anaconda, MT 59711

Dear Millie,

Thank you for your comments last month about the public meeting and the upstream impoundment. As for the meeting, we will have a sound system at the public hearing on Dec. 14 in Anaconda and in the future I will try to always remember to bring a sound system to the Metcalf Center. It is a bigger room than we usually get for public meetings. I apologize that you were unable to hear at the November meeting.

I have enclosed a copy of the memo I am sending to the file. Please let me know if I have inaccurately recorded your comments. If I don't hear from you before Dec. 29 (the end of the comment period) I will assume the memo is correct and will enter it in the comment file which will be addressed in the responsiveness summary.

Sincerely,

Janie Stiles

Janie Stiles
Superfund public information officer

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

STAN STEPHENS, GOVERNOR

COGSWELL BUILDING

STATE OF MONTANA

FAX # (406) 444-2808

HELENA, MONTANA 59620

Dec. 5, 1989

TO: Legal file for Warm Springs Ponds Feasibility Study Comment Period 1989

FROM: Janie Stiles, Superfund Public Information Officer JMS

On Nov. 15, 1989, I received a phone call from Millie Mathews who lives in Opportunity and owns property in the location of the proposed upstream settling pond as outlined in the Feasibility Study. Millie said she would like me to include our conversation as part of the public record of comments on the Feasibility Study.

Millie said it was impossible at the Anaconda informational meeting on Nov. 9 to hear the people who were asking questions. She suggested we bring a sound system to the hearing in December for the audience to speak into.

Millie said she is opposed to the upstream impoundment and would prefer to see the impoundment be placed south of Pond 3 or to use the Opportunity Ponds. She said she has already seen a drop in property value on the land they own in the area of the proposed pond. A potential buyer has expressed concern about the pond's placement. Correct

Millie commented that during the meeting she got the impression that fish are more important to MDHES and EPA than people are. Correct

Janie:

This is not accurate - I said the Opportunity ponds were used by Asarco - with a portion of the ditch that transported Silver Bow Creek water still intact. I said Asarco like the ditch as it also lines the Oppor ponds along with Asarco is doing — Do NOT Damage

"AN EQUAL OPPORTUNITY EMPLOYER"

More Land. We will be surrounded by Ponds. Keep water in Off of Ponds Keep Dust from Blowing.

My New Comment After Study along with Conrad Burns idea is to Clean up Silver Bow Creek as creek (BUTTE).

How to Haul or Waste Inquire Land in Browns Gulch for settling Ponds ??

GROUND WATER Damage
Real estate Values
~~Est~~ WOULD THE STATE Be Responsible for Damage This would Cause

Janie the more I think of this the more damaging this is we live here and love it. No Outsider may understand. By now you will know how others feel also

Please Consider
Thank you
Julie Matthews
& Family

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JAN 19 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Anaconda/Deer Lodge Reclamation Advocates
P.O. Box 61
Anaconda, Montana 59711-0061

January 16, 1990

Site
File #
Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

Department of Health
and Environmental Sciences
Cogswell Building
Helena, Montana 59620

Attention: Vick Anderson
Superfund Section Supervisor

RE: Warm Springs' Ponds Proposed Remediation Plan

Dear Mr. Anderson:

The following letter summarizes and supplements the testimony given by the Anaconda/Deer Lodge Reclamation Advocates at the hearing of December 14, 1989 at the Metcalf Center.

Our concerns regarding the Warm Springs Ponds' preferred alternative are as follows:

The creation of a new settling pond south of the community of Opportunity creates yet another superfund site in our area and presents health, esthetic and economic hazards to the community of Opportunity.

1. There is a distinct possibility of ground water contamination and domestic well pollution in the Opportunity area. In addition, a settling pond of this magnitude may also raise the already high water table in the area and impact the septic tanks and drain tiles which are vital to the proper drainage of the Opportunity community. The airborne contamination is also a concern to the community.

2. The proximity to the Pintler Wilderness and Big Hole hunting and fishing grounds have long been treasured assets of this area and the quality of life has been one of the advantages of residents here. Creation of another source of contamination, especially near the highway intersection from the interstate to Anaconda, cannot fail to negatively impact the public's perception of the entire area, reducing its appeal as a business or residential area.

3. The additional pond will take productive land out of use and out of the Deer Lodge County tax base, will reduce the property values in Opportunity, fears of pollutants diminish the resale value of Opportunity real estate.

Routing Mill and Willow Creeks through the ponds system effectively close these streams as fish hatcheries for the Upper Clark Fork River. Fish cannot migrate through the ponds system during the spawning season to these fisheries. A preferred alternative would be to remove any waste that exists along Mill and Willow Creeks, creating upstream holding ponds, limit the flow in these streams during a flood event and also to control the stream flow throughout the season to improve the fisheries. The routing of the Mill and Willow streams through the ponds creates an additional burden on the ponds system with respect to any flood event. If the Mill and Willow Creeks and their tributaries bypass the ponds system, 27% of the total water drainage proposed for the ponds system would be eliminated, and a threat to the ponds system diminished. We prefer substantially enhancing the dike systems at the Warm Springs ponds to accommodate 100 year flood events. We would support a proposal that would include the removal of mine tailings from Mill and Willow Creeks and the removal of mine tailings from the Mill/Willow bypass. We also support the raising and strengthening of the number 2 and 3 dikes to cope with the maximum flood conditions by increasing overall capacity, the enhancement of the water treatment facilities, as well as the collection of ground water be returned to the ponds system. It would also permit the wet closure in pond 1 as the company has spent years developing the wet lands with the Department of Fish and Wildlife.

We believe that the manner in which the Warm Springs ponds RI/FS was developed by the Department of Health and Environmental Sciences was badly flawed. Public input of the local area was not sought. In fact, there was no hearing originally scheduled in Deer Lodge County where all of the remediation plan is proposed. It is our understanding that the principal responsible party was not included in the development of the preferred alternative.

Yours very truly,

Frank Bennett
Co-Chairman

Charles Haeffner
Co-Chairman

Site_____
File #_____
Confidential: Yes_____ No_____
Admin. Record: Yes_____ No_____
Key Words/Comments:_____

Steve K. Loken
P.O. Box 8872
Missoula, Montana
59807

January 18, 1990

Jane Stiles
Dept. of Health and Environmental Sciences
Cogswell Building
Helena, Montana 59620

RECEIVED
JAN 22 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Ms. Stiles;

Having been a former Hydrologist for the U. S. Forest Service I would like to offer a few suggestions and recommendations for cleaning up the Silver Bow Creek Superfund site, downstream from Anaconda.

First, I dont think that an effective, safe, long -term stabilization of the pond tailings are possible if they are left where they are. They will continue to leach metals and toxins into the aquifer and as a result, it doesnt seem like a solution at all.

Secondly, we're talking about a huge expenditure of public funds here for nominal gains, and I fully realize that many very competent individuals have played an important role in developing your clean-up alternatives. Their expertise is not at question with me. I would however, like to propose the following alternative clean-up scenarios:

* The tailings and pond water could be slurried in a pipeline over the hills back to Butte. Water from both the Berkely Pit (already toxic) could also be used as makeup water for the slurry system, so as to approach a "closed loop" situation as much as possible.

* Silver Bow aquifer on the flats in Butte, is rising to reach its equilibrium, now that the underground water pumps have been shut off. This will bring, over time, more water in contact with the underground and open pit mineral strata, hence, the potential for more dissolved toxins. By using the existing Berkely Pit waters for a slurry pipeline, you have that water 'hostage' in the pipeline system, (or at least a portion of it.)

* By putting both toxic water and tailings into a closed slurry loop, the opportunity now would exist to , not only fill the Berkely Pit with this waste, but remove it from the floodplain at Anaconda-Warm Springs. This would also accomodate both the metalurgical and chemical removal of heavy metals,copper, molybdenum, and other useful industrial metals from the slurried wastes

The potential technical problems with this proposal, I think, are diminished by the potential advantages:

**Two waste sites are consolidated into one.
**Both water and tailings can be effectively treated chemically,or physically.
**Further mineral and metal extraction can take place.
**Much less energy intensive than relocating by truck.
**Groundwater quality at Warm Springs could improve.
**No new offsite tailings storage area is rendered sterile.
**Groundwater quality at Butte Silver Bow could potentially improve with long term treatment of slurry waters.
**Minimization of particulate dust being generated.
**The potential creation of long term jobs,extracting useful metals and cleaning water, instead of relocating or "sealing" the tailings, and hoping for the best.

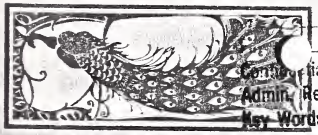
This "slurry-back-to-the-Pit" idea may have already been explored, but I would like to know if it has any merit in relation to the other proposals for clean-up, and if it has no merit, why, and what are the insurmountable technical problems?

Thank you very much, and I hope I can open some dialogue or in some way help to create a long-term positive solution to the wide assortment of clean-up problems at Butte-Silver Bow.

Thank you,

STEVE K. LOKEN

Steve K. Loken



Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

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JAN 22 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dane Stiles — dear Jane — 8 years of lies — corruption — thievery — make a person look like a choir boy — where are the heavy weights of old — Roosevelt — Truman — for a couple? — please examine the C.I.C. program thanks — from our dear country

truly yours

BERNARD C. SHAW
STAR RT. BOX 147-A
BONNER, MONTANA 59823
244-5221

if you think Jeb is tough years for good gentleman in
M. Street USA

1/19/90

M/s Jane Stiles
MT. Dept. of Health & Environmental Sci.
Cogs Well Building
Helena, MT 59620

Site
File #
Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

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JAN 22 1990
MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
STATE HAZARDOUS WASTE BUREAU

Dear M/s Stiles,

From all I am able to read with regard to the proposed clean-up of the WARM Springs Ponds, it would appear that only make-shift proposals are coming from your Department and ARCO.

Honestly now, haven't we all in Montana had enough of that? Can't we do it right the first time, while we have ARCO on the hook?

The dikes should be strong enough to withstand an earthquake and raised to hold more. We should also have some type of upstream dam system to protect the ponds in years of very high water.

The Mill Creek - Willow Creek by pass has been killing fish (and who knows what other wildlife and fowl) for years.

How about removing the tailings

from the by pass. As you drive along the Interstate and look to the East. It would appear that there is some fairly desolate non-farm ground. Couldn't a site well out of the flood plain be secured, so that all the tailings from the flood plain be removed? --- There might be an added benefit in doing so by creating a few new jobs

Your department has got to stiffen its collective backs and just say "no" to a partial solution. With proper treatment the Clark Fork River could be as much of an asset to the State as is the Yellowstone.

Please hang in and do a really good job for all of us.

Sincerely

Frederick B. Tossberg
278 Grantsdale Rd
Hamilton Montana

1-19-1990
Missoula, MT

Identifier: Yes___ No___
Add. Record: Yes___ No___
Key Words/Comments:___

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JAN 22 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

JANE Stiles
Dept. of Health & Environmental Sciences
Cogswell Bldg.
Helena, MT 59620

Dear Ms Stiles—

I've lived in missoula and have watched and used the Clark Fork River since 1963 when I moved to montana. Repeated fish kills, the discovery of heavy metals behind the Milltown DAM and then the gradual understanding of the amount of toxic material buried in the Anaconda Ponds and the Stream Bed of the Clark Fork have been troubling developments. It seems to me that a maximal effort should be made to allow the cleanup of the Clark Fork to be as effective and through as possible. The ponds should be fixed to withstand major earth quakes & floods. I feel this work should start in 1990 to protect the River while more permanent solutions are developed.

Sincerely

Wesley W. Wilson MD
3122 Mountain Wood Road
Missoula, MT 59802

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JAN 22 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Ms. Jane Stiles
Dept. Health and Environmental Service
Cogswell Bldg, Helena Mt. 59620

Dear Ms.Stiles,

It is encouraging that work may soon be underway to clean up the Clark Fork River. However, I am concerned over whether or not the proposed alternative for the Warm Springs area will provide the protection the river needs over the long haul.

For some time now the Clark Fork Coalition and others have raised questions as to adequacy of the proposed alternative to protect against contamination from tailings and the ponds in the event of floods and earthquakes.I don't know much about the probability or potential threats from earthquakes, but having lived in Missoula for over 25 years can recall quite a few high water runnoffs and flooding of lowlands. In spite of the rather dry years we have been experiencing lately it is virtually certain that we will have an event that will again wash contaminants into the river, such as occurred on a localized basis leading to last years ('88) fish kill. Certainly a large amount of work has gone into gathering data and developing models to estimate the effects of various intensities of floods and other events. It seems to be a folly, therefore to chose an alternative that would not afford protection against conditions we have already seen in the past and have every reason to believe will occurr again in our lifetimes.

Another concern I have is that in the two public meetinsg I have been to in Missoula and in the draft reports and news releases I have seen there doesn't seem to be a clear picture of where the Warm Springs efforts fit into the total cleanup needs. Several alternatives for the Warm Springs work have been discussed but it seems that the cost effectiveness of these can only be determined when upstream work has been included in the analysis. In other words, if it were possible to treat the upstream areas that are the source of some of the contaminants, would the same Warm Springs treatments be necessary or viable?

The residents of the Clark Fork valley have shown their concern for coming up with permanent efforts to clean up the river. Opposition to "dumping" from the pulpmill ponds, passage of phosphate bans, and insisting on improved timber harvesting, mining, and roadbuilding practices are examples of public concern. In the case of the Warm Springs cleanup, the situation is so complex and technical that as laymen we can only hope and trust that your agency and the State and Federal EPA administrators will give us the very best and comprehensive effort in developing a permanent solution.

Yours truly,
Robert E. Benson
2325 Valley Drive
Missoula, MT. 59802

Site
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Confidential: Yes No
Admin. Record: Yes No
Key Words/Comments:

RECEIVED
JAN 22 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 20, 1990

Bill Burnett
1520 Garfield
Missoula, Montana 59801

Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building
Helena Montana 59620

Ms. Stiles,

I am writing to express my dissatisfaction with the proposal for clean up of the Warm Springs Ponds. A job needs to be done. The proposed work will not get that job done.

The agency proposals seem to rely on short term stop-gap measures which fail to integrate the depth and severity of problems related to metal and mineral concentrations present in the flood plain and associated areas of the valley with a recognition that we have the responsibility to repair a damaged river system, period.

It would be better to pursue an adequate solution over a long period of time than spend time and money on procedures which will not protect the river system from events over which we have no control.

Contaminated material needs to be moved out of the flood plain and upstream impoundment structures must handle flood episodes exceeding one hundred year events. The ponds themselves need to be protected from effects of the same magnitude of flood and from worst-case scenario earthquakes.

Contaminated material need not be moved out of state. It needs only to be gotten out of the immediate flood plain and stabilized.

I attended the information session held in Missoula, and came away with a feeling that these issues were being handled from political and short-term expense points of view. I believe our perspectives need to change. We need to face the severity of the problems and not put off on tomorrow what must be done today. In fact overall costs will be less if we admit the problems and deal effectively with them.

Thank you for your attention,

Bill Burnett

94

Jan. 17, 1990

I think EPA and MDHES have thrown away enough of our TAX dollars.

Here are Two votes For the Arco plan.

Sincerely

Paul Gambee

Dorothy Gambee

RECEIVED
JAN 22 1990
MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

RECEIVED
JAN 22 1990
MDHES
Environmental Sciences Div.

Box H
Warm Springs, Mont.
January 22, 1990

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JAN 23 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Montana Dept. Health & Environmental Sciences
Solid and Hazardous Waste Bureau
Room B201, Cogswell Building
Helena, Mont. 59601-9987

Attn. Janie Stiles:

Since it has been well documented that a wet-lands area provides a most natural and effective method of reclaiming waste disposal areas such as the Warm Springs Ponds area, this method should be given high-priority consideration wherever possible in the Clark Fork clean-up. With this in mind, I would recommend the adoption of the Arco Plan, Alternative 3A, Nov. 27, 1989 with the below mentioned changes or suggestions.

1. Do not divert Mill-Willow By-pass i nto the pond system. Instead, create a meandering stream (with best-known fish habitat development) between the present by-pass and I 90 highwyy. Continue the meandering stream across the present Warm Springs Creek Channel and to the west side of the present Sewage Lagoons to the area north and east of the lagoons. Here, create a pond system with whatever treatment is necessary to provide ideal water quality before continuing the meander to the Clark Fork River.

Dikes on this pond system should be sufficient to handle seasonal and projected floods. Create waterfowl habitat as well as ideal fisheries.

2. Instead of pumping water and/or sludge from the area below Pond #1 all the way back to Pond 3, I would suggest that a series of drains be constructed to pick up any and all seepage below Pond #1. The seepage thus collected should be transported either by gravity flow if possible or by pump (or both) to a pond system north and east of the present Sewage Laggons. Create a wet-lands area with treatment as necessary. The effluent would then flow through additional wet-lands area and fish habitat to the Clark Fork River.

3. Raise the level of Pond #3 to flood additional area at the inlet and cover exposed tailings and polluted ground areas with water. Rather than a berm across Pond #3, construct a series of many small islands to facilitate the mixing of water and to prevent short-circuit of water. Island material could be hauled out on the ice or frozen ground and dumped. Seed to grasses and vegetative cover.

4. Wet-close Pond #2. Flood exposed tailings and contaminated soils. Create islands. Seed grasses and dense nesting cover on all disturbed areas.

5. Wet-close as much of Pond #1 as possible. Create islands and dense nesting cover.

In regards to the EPA Proposed Plans, October 1989, I would suggest Alternative #3 with the below mentioned changes or alterations.

1. Mill-Willow By-Pass. See suggestion 1. above.
2. Seepage Area below Pond #1. See suggestion 2. above.
3. Wherever possible, create wet-lands areas with islands, reseeding and dense nesting cover for waterfowl.
4. Flood Control for any and all plans:

Construct a diversion canal to handle all flows in Silver Bow Creek from 500 cfs up to 4,000cfs or greater and divert these waters to the Opportunity Pond System already in existence. This area was becoming ideal waterfowl habitat when it was dried up and several thousand acres of good habitat were destroyed. This pond system has sufficient storage capacity for 100 yr. flood and more.

To prevent exposed tailings, dust blowing, etc. enough water should be diverted into the Opportunity Pond System to keep it wet at all times. This would create a wet-lands system of reclamation, encourage vegetative growth and provide waterfowl habitat again. The stored water, resulting from flood stages (even normal seasonal high run-off) could thus be stored and released when needed for irrigation or to maintain proper stream flow in the Clark Fork River. It would be released through the Warm Springs Pond System. This would prevent down-stream flooding, control dust, maintain and even stream flow, provide better and more uniform use of our water, and could create a waterfowl production and wildlife area second to none in the U.S.

Please take these suggestions into consideration when you are making final decisions for the clean-up process. Thank you.

Sincerely,

Bob Greene

Biologist, Mont. Dept. Fish
Retired

Robert J. Greene

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JAN 23 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

4741 Sundown Rd.
Missoula, MT 59801

Jan. 21, 1990.

Jane Stiles
Department of Health and Environmental Sciences
Cogswell Bldg.
Helena, MT 59620

Dear Jane,

As Missoula citizens who are very much concerned about the clean up efforts on the Clark Fork River, we want to strongly endorse the standards for the clean up that are being proposed to you by the Missoula City County Health Board and the Clark Fork Coalition.

The plan for the clean up proposed by your department and the U.S. Environmental Protection Agency is inadequate. Work to prevent flooding damage to the Warm Springs ponds should start in 1990. The risks are too great to allow for waiting until later.

Sincerely,

Alice H. Austin

Alice H. Austin

Briggs M. Austin

Copies to: Senator Max Baucus
Representative Pat Williams
Governor Stan Stevens

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JAN 23 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

21 Jan. 1990

Dear Ms. Stiles,

I am writing in regard to the Warm Springs Ponds cleanup. I believe that ARCO should be required to begin work as soon as possible. I am a Missoula resident & am very concerned about water quality. That is why I am writing. State water quality standards should be meet below the ponds at flows up to the 100-year flood levels. I also support using very conservative design citeria in the construction of all 3 ponds. Any interim solutions must include the combination of dike raising & upstream impoundments on Silver Bow Creek & tributaries, so that all water flows are effectively treated. Even though I understand that the proposed cleanup plans are not a permanent solution, work must be done to protect downstream flows while upstream areas are cleaned.

In addition, I encourage all involved agencies to remove all wastes from the floodplains.

Thank you,

Kathy Ahlenslager
919 Woodford #1
Missoula, MT 59801

98

650 RATTLESNAKE
MISSOULA, MT 59802

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JAN 23 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 21, 1990

Ms Jane Stiles
Dept. of Health and Environmental Sciences
Cogswell Building
Helena, mt. 59620

Dear Ms. Stiles:

Current plans for cleaning up the Clark Fork River appear to be inadequate. May I urge that you do all in your power to see that:

1) All wastes are removed from the floodplain
2) The river is protected while upstream sources are cleaned up.
3) The ponds are fixed to withstand major earthquakes or floods. [over, please]

4) Mill Willow bypass tailings should be removed.
5) Arco performs this work in 1990
6) Treatment should handle all flows up to 100-year flood.
7) Water quality below the ponds should meet state standards.
8) All ponds should be built using the most conservative design criteria.

Thank you

Sincerely,

J. George Hummel

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JAN 23 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
WASTE BUREAU

4805 Arcadous Road
Missoula, MT 59803

January 21, 1990

Jane Stiles
Dept. of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

I am writing in connection with the proposed cleanup plan for the Warm Springs Ponds.

In light of the critical importance of doing the job, and doing it right, I urge you to include in the final cleanup plan the following points:

1. The ponds should be fixed to withstand major earthquakes and floods. The Mill-Willow bypass tailings should be removed from the floodplain to prevent fish kills. This work should be performed by Arco in 1990, and not some later time.

2. The agencies should look seriously at removing all of the wastes from the floodplain, and aggressively pursue nearby disposal sites and new technologies to extract the metals from the wastes.

3. Water quality below the ponds should be designed to meet state standards at flows up to the 100-year flood level.

4. The interim solution should include a combination of dike raising and upstream flood impoundments on tributaries and on Silver Bow Creek, in order to effectively treat all flows up to the 100-year flood levels.

5. All three ponds should be built using the design criteria which will provide the greatest protection to the Clark Fork. An incremental risk assessment should be done to determine the appropriate

level of protection .

Thank you for considering my views.

Very truly yours,

Mark S. Connell

23 Jan 90 100

RECEIVED
JAN 24 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Madame,

The most people I am bewildered by the size of the ~~response~~ cleanup effort for the Clark fork river.

In specific I support the detailed position of the Clark Fork Coalition. I need not re-iterate them to you.

I want action as soon as possible! There has been enough talk, debate and study. The ponds are a good place to start.

The enclosed may be "Pond and Flexman" revenge but maybe it works. Don't fail to look into it.

My biggest concerns are

fish kill, earthquakes, Floods, permanent solution and ARCO liability.

Sincerely
John Dilley

MR. JOHN DILLEY
-BOX 7752
MISSOULA, MT 59807-7752

KURT WILSON/Missoulian

RICHARD HAMMEN displays a small-scale model of the filter he hopes will be used to seperate mining wastes from the water in Butte's Berkeley Pit.

Diving into the Berkeley Pit

Richard Hammen believes he can clean it up and make millions to boot

By SHERRY DEVLIN
of the Missoulian

The "gee whiz science" in Richard Hammen's chemistry lab could turn the granddaddy of environmental messes — the Berkeley Pit — into a $950 million opportunity.

Hammen is the smarts (and the stubbornness) behind a high-technology filter that extracts what he calls "evil" metals from mining wastewater, cleaning the water and separating the metals into marketable chunks.

The Berkeley Pit is the 1½-mile-wide toxic reservoir in the making in downtown Butte, excavated during 25 years of mining and flooded by 11 billion gallons of acidic mine drainage after digging stopped early in the 1980s.

If Hammen can clean the water in the Berkeley Pit, chemists and geologists say, he can clean any environmental mess. He also can recover an estimated $950 million worth of zinc, copper, nickel, iron, manganese and arsenic dissolved in the pit water.

But first he's got to negotiate a political and financial obstacle course that includes lunches at the Rotary Club in Butte and dinners with potential investors out of state.

"We were very naive. We still are. It makes things exciting," said Ralph Judd, a biological sciences professor at the University of Montana and part of Hammen's research and development group.

Hammen brought his company, ChromatoChem Inc., to Missoula in 1986 to manufacture drug purification filters. His filters are, in his estimation, cleaner, faster, longer lasting and higher in capacity than all competitors.

The wastewater filter was a "fantasy," Hammen said in an interview at his office at Community Medical Center. "The challenge of an environmental mess is to separate the evil things from the other things," he said. "The technologies that get value out of garbage will be the technologies of the 21st century."

Here's how Hammen's technology — what he calls "gee whiz science" — works:

Acidic mine drainage is pumped through a column filled with silica beads. Silica is sand; this sand has been processed so it looks like millions of tiny sponges.

ChromatoChem coats the surface of the sand with its "proprietary chemistry," a secret mix of chemicals that attracts and holds onto toxic metals.

The coating is called a chelator — or claw. So effective is the ChromatoChem claw that the water exiting the column has no detectable contamination. All the "evil" metals stick to the sand.

What happens next is what gives ChromatoChem "a tremendous advantage" over would-be competitors, said Thomas Wheeler, director of research and graduate studies at the Montana College of Mineral Science and Technology.

> 'We know we've got a good process. We know we need a process like this to clean acidic mine drainage. And we know the Berkeley Pit is the granddaddy of environmental messes.'
>
> — Richard Hammen

A dilute solution of base is pumped through the metal-filled column, releasing the claw and the metals. "Amazingly," Wheeler said, the metals come out concentrated and separated. The silica is clean and ready for another dose of wastewater.

Benchtop tests at UM over the past two years proved ChromatoChem's process "successful beyond our wildest dreams," said Judd. UM has equity in ChromatoChem and will receive a share of any income the wastewater filter brings in, he said.

The recovery of metals is important because "we've got to defray the monumental expense of environmental cleanup," Judd said. "Our process turns out metal-free water and marketable metals. We did not anticipate such a grand success."

Hammen and Montana Tech are after grants now to finance a pilot wastewater treatment plant at the Berkeley Pit. They have a $13,000 pledge from the Montana Science and Technology Alliance and want another $130,000 from the U.S. Environmental Protection Agency.

"We're like a chicken just starting to peck its way out of the egg," Hammen said. "We know we've got a good process. We know we need a process like this to clean acidic mine drainage. And we know the Berkeley Pit is the granddaddy of environmental messes."

Excavation of the Berkeley Pit started in 1955. The EPA estimates that more than 3,500 miles of underground mines are interconnected with the pit. When mining stopped in the early 1980s, pumps were shut off and water started pouring into the pit — at a rate of seven million gallons a day.

The water that seeps into the Berkeley Pit is highly acidic and loaded with metals, Judd said, because it flows through rock shattered by mining and weathered into soluble salts.

"You wind up with a whole mixture of toxic metals that aren't concentrated enough to mine, but are toxic enough to kill anything within reach," he said.

Said Hammen: "It's the old 'too thick to drink, too thin to plow' problem. I believe that the Berkeley Pit is a very rich and pure mine. It also represents a problem of the highest priority in the EPA's Superfund cleanup."

Left unchecked, the water level in the pit eventually will reach "catastrophic proportions," contaminating the city of Butte's drinking water, Silver Bow Creek and the Clark Fork River, he said. That crisis could come in eight years or in 20, according to EPA reports.

(See BERKELEY, Page E-6)

Berkely

(continued)

"The Berkeley Pit is a monumental problem," said Russ Forba, the EPA's project manager in Butte. The water is 600 feet deep and is increasing by about 4 feet per month.

Said Wheeler, Montana Tech's research chief, "The EPA and probably the World Bank don't have enough money to clean the water in the Berkeley Pit. We have to find a technology like Rich Hammen's to offset the cost of cleanup. We need to recover $950 million worth of metals to even bring this thing within an affordable realm."

Still, Hammen said he "isn't putting all of ChromatoChem's eggs in the Berkeley Pit." The politics are too dicey, he said. No one wants to be saddled with responsibility for the mess, because no one wants to be saddled with the cleanup costs.

Hammen said he has had trouble attracting investors because mining companies don't want anything to do with the pit, lest they admit responsibility for the pollution, and other companies don't want anything to do with the lumbering Superfund process.

"At the pit, the cleanup may end up going to whoever gives the best speech at the Rotary Club and the Chamber of Commerce," he said. "You get the impression that decisions won't be made rationally. It's more important to be stubborn than to be smart."

Thus ChromatoChem's interest in the nuclear industry, which eventually will have to pay an estimated $100 billion to purify millions of gallons of low-level radioactive wastewater.

Nuclear plants need to extract cobalt and nickel from water; Hammen's filter can do that. Said Hammen, "We can pump immense volumes of water through very small cartridges and extract the radioactive metals. The cartridges get hotter than blazes, of course, but are easily fused shut and disposed of."

Another ChromatoChem spin-off, a filter that removes lead from drinking water, is being marketed by Purity Systems Inc. of Missoula. The filters, Hammen said, are "extremely effective." Millions of households don't meet federal drinking water standards.

"It's frustrating to sit here with a technology that is so far advanced from anything anybody else has, but without enough capital to take our product to the world," Hammen said. "I am not patient. The world deserves better technologies and better products and a cleaner environment."

"I have to admit that it sounds crazy that a company with seven employees could solve any of the world's problems," he said. "But that's how it starts."

RECEIVED

JAN 24 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 10, 1990

TO: Kathleen Demarinis
Montana Department of Health and Environmental Sciences
Cogswell Bld.
Helena, Montana 59620

FROM: Missoula Water Quality Advisory Group
c/o Environmental Health
Missoula City-County Health Department
301 W Alder
Missoula, MT 5980

RE: **COMMENTS ON THE WARM SPRINGS PONDS PROPOSED PLAN**

Dear Ms. Demarinis,

Enclosed are comments of the Missoula Water Quality Advisory Group (MWQAG) concerning the Warm Springs Ponds Proposed Plan. The MWQAG is a volunteer organization of hydrologists, soil scientists, water chemists, engineers and other water professionals who advise local government agencies and bodies on water quality issues. Our comments include both general views of cleanup strategies and specific proposals for the Warm Springs Ponds.

GENERAL COMMENTS

Clear goals and objectives must be developed for the entire Clark Fork superfund site. All activities should address these goals directly. Water quality and health risk should be controlling factors in establishing goals and determining success of actions. The Warm Springs Ponds Proposals must be presented and evaluated in relationship to these overall goals.

Public participation must increase at the early stages of project definition, research and remedial action development. The projects magnitude demands coordinated action by all groups including local government entities, all applicable govt. agencies, citizens groups, water quality advisory groups and others. Superfund must come out from behind closed doors into the light of traditional environmental review and public participation.

Dividing the CF Superfund Site into subunits appears to foster uneven progress for cleanup efforts. Overall coordination needs to be much more aggressive. Upstream pollution sources need to be stabilized before extensive cleaning of downstream sites.

An overall strategy should be adopted for treating the entire basin which includes:

1 Emergency protection of sites which are creating current pollution problems and for which there are reasonable temporary solutions. This would include the Warm Springs Ponds.

2 Solutions must be permanent and they must be designed to withstand the expected hazards of earthquakes, catastrophic floods and erosion over geologic time.

3 High risk materials should be removed from floodplains and structures such as the ponds or they should be protected from the Potential Maximum Flood. Construction standards for all flood protection measures (dams, dikes, rip-rap, etc.) should be more stringent than those existing for regular water structures. Construction standards should reflect the hazards and costs associated with catastrophic release of toxic materials.

4 Containment of wastes in the upper drainage area. Contaminants should be contained at their current locations kept pending future cleanup. This will centralize the worst of the problem. Flood control/sediment traps should be installed in the upper drainage to protect the lower river system from contamination until upper drainage sediment sources are stabilized. Contaminated sediments in these structures will have to be treated or stabilized in the final cleanup phases.

5 Identification of a suitable, long term disposal site or sites in the CF headwaters area which can receive materials from superfund cleanup projects. The volume of potential materials is too large to consider out-of-state disposal.

6 Every proposed action should be tied to an objective and a water quality standard. Provisions must be clearly spelled out concerning what happens if standards are violated and who has responsibility for taking further action and paying the bill. What happens if it doesn't work?

7 In addition to technical details, we must help the agencies attract and keep the quality of personnel and the commitment of resources needed to move through the cleanup process.

SPECIFIC COMMENTS

A risk assessment of health hazards from contaminated deposits must be a part of the Clark Fork superfund process. Contaminated sediments are spread along hundreds of miles of the CF Floodplain. It is impractical to remove and/or treat this volume of material. We need to identify sites that require removal or stabilization. The concentration and volume of contamination must be considered as well as likelihood of erosion and other factors. A separate part of this risk analysis should evaluate the health risks associated with a catastrophic release of contaminant from the Warm Springs Ponds. We cannot decide what to cleanup or how well if we don't know the risks.

Proposed treatment alternatives should not include water quality violations, even during floods. Both the proposed state plan and the Arco plan for Warm Springs Ponds will violate water quality standards. Although we can live with some pollution during cleanup efforts, we do not think on-going pollution should be designed into these projects. Proposals to route flood flows

through the Warms Springs Ponds would probably not provide acceptable treatment for suspended contaminants. Heavy metals concentrations would likely violate water quality standards because residence time in the pond system would be too short. Upstream flood control impoundments would benefit treatment by releasing flood waters slowly.

Flood control dams in the upper drainage should be thoroughly evaluated as a part of the Warm Springs and other proposals. This alternative has some obvious major benefits. Flood control dams would reduce the magnitude of floods and sharply reduce the impacts of flood events including "catastrophic" runoff and erosion events. "Taming" the river in this way may prevent contaminated materials all along the river system from eroding and spreading throughout the superfund cleanup period. The amount of sediment carried downstream is directly related to the flow so reducing flood flows reduces sediment transport. Reservoirs might be located on drainages above tailings where impoundments will not collect contaminated sediments. This alternative would help protect downstream cleanup efforts such as those at Warm Springs, Deer Lodge and Milltown.

Flood protection measures for the Warm Springs or other ponds need to be significantly better than those proposed. Construction standards should reflect the hazards and costs associated with catastrophic release of toxic materials. Flood protection costs must be compared with removal to outside the floodplain.

SUMMARY

None of the proposed alternatives meet the goals of the MWQAG or the long-term interests of Missoula County. Components of some alternatives have merit as intermediate solutions but do not tie directly to an overall cleanup effort in the drainage. Without risk analyses or cost/benefit analyses it is difficult to judge the adequacy of alternatives or make comparisons.

The Missoula Water Quality Advisory Group recommends that the Warm Springs Ponds Proposed Plan (10/89) be expanded to include additional information and alternatives. These alternatives should address the concerns outlined above with special emphasis on:

* upper drainage flood control reservoirs
* enhanced construction standards for the ponds
* identification of a local, long-term disposal site
* clear water quality standards, sampling schemes and additional cleanup responsibility for violations
* cost/benefit analyses of alternatives designed to reduce health risks
* further evaluation of groundwater contamination and the risks associated with leaving these or other contaminants in the floodplain
* expanded, public participation in this and other superfund projects at the early stages of project conception and design

The Missoula Water Quality Advisory Group appreciate this opportunity to comment on the Warm Springs Ponds Plan and look forward to working with you in the future.

Sincerely,

Barry L. Dutton

Barry L. Dutton
Chairman

cc Missoula City-County Board of Health
Missoula City-County Health Department
Missoula County Commissioners
Missoula City Council

January 22, 1990

RECEIVED
JAN 25 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Ms. Jane Stiles
Department of Health and Envir.
Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

When are we going to realize that the environment is for our children as well as ourselves? When are we going to take a stand that requires those that make money from the environment must not destroy, mutilate or endanger the land that's provided us with so much for so little.

It has to be now. We can not afford to wait another decade to take a stand. We can not afford to do too little too late.

The United States government recognized by authorizing a Superfund that corporations and citizens have neglected to protect the environment for the past century. These funds are supposed to clean up the mess. Make right from countless years of wrong. Then let's use those funds properly and do the job right the first time. How many times do we have to make more mistakes from the first?

The Clark Fork River is one of the main arteries of the Northwest. It has to be protected to the fullest extent of our abilities.

-Fix the ponds to withstand major earthquakes and floods. Put in the extra dollars now to do it right or put in a lot more later. Remove the tailings to prevent fish kills.
-Seek alternatives to extract metals from the waste material.
-Keep the 19 million cubic yards of hazardous waste in the Warm Springs Ponds in place until they can be cleaned up permanently. Raise the dikes to withstand a 100 year flood.
-Never should water quality down stream be allowed to exceed state standards. Never. There is no excuse for our water to be contaminated.
-The wastes should be removed. Is the money for bureaucracy or for clean-up? Get rid of all the parasites working for the Superfund and put in some labor and machinery.

Sincerely,

John Roskelley

John Roskelley
E. 16641 Foothills Road
Spokane, WA 99207
(509) 928-2587

John L. Wozniak, CLU, ChFC

RECEIVED
JAN 25 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 23, 1990

Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Jane:

I would recommend that all the heavy metals be removed from the Upper Clark Fork river drainage. Sooner or later this will have to be done. It will never be less expensive than it will be now.

Sincerely,

John L. Wozniak, CLU, ChFC

2000 Russell
P.O. Box 4207
Missoula, Montana 59806
406-728-2710
Residence 406-273-6341

880 Lobby Circle
Billings, Montana 59105

January 24, 1990

RECEIVED
JAN 25 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Vic Anderson
Department of Health & Environmental Sciences
Solid & Hazardous Waste Bureau
Helena, Montana 59620

Dear Mr. Anderson:

In a Gazette article on the Clark Fork Superfund, it was stated that the state is taking testimony on the Warm Springs Ponds cleanup through January 31. I would like to add some comments which might be pertinent.

The Warm Springs Ponds may be the best repository for pollutants presently stored in them and for future movement of polluted sediments. Some considerations include:

1. Some or all of the bypass channel flows should be controlled.

2. A thorough sediment survey should be made of the ponds and sediment volumes correlated with historic flood amounts and erosion in the watershed. This would aid in making accurate projections of future sediment yields and determining storage needed to contain long-term sedimentation.

3. Analyze the alternative of enlarging or modifying the present fills to handle the total 100-year and probable maximum floods versus alternatives of various combinations of upstream dams with lesser modifications to the fills.

4. The fills can be strengthened to provide earthquake protection while being modified to handle the design floods.

5. The present ponds provide a significant wildlife habitat, some flood control, and trap most of any polluted sediment from upstream. It will probably be difficult to provide all those benefits through some other approach.

In support of my comments, I would state that I was in responsible charge of design and construction of over 100 flood control dams, many with more storage and greater height than the Warm Springs Ponds. In addition, I have written specifications for, contracted, and supervised performance of reservoir sedimentation surveys; therefore, I know their application and value.

This letter was written to you because you are intimately involved in the Clark Fork project and I know you from the demonstration proposal.

Very truly yours,

Peter Forsythe

File # 5.05.11.07
Confidential: Yes ____ No ✓
Admin. Record: Yes ____ No ____
Key Words/Comments: Public comment concerning Warm Springs Ponds proposal
Copy to MDHES 1-24-90

105

December 13, 1989

Mr. Mike Bishop
Environmental Protection Agency
Federal Building
301 South Park - Drawer 10096
Helena, MT 59626.

ENVIRONMENTAL PROTECTION AGENCY
DEC 15 1989
MONTANA OFFICE

Dear Mr. Bishop,

I would like to take this opportunity to voice my opposition to the proposed tailings pond near Opportunity.

I do not feel the people of Opportunity nor the economic future of Anaconda have been considered in making this proposal. If this is to go into effect, what are the ramifications to the water levels in Opportunity and what kind of guarantee do we have against groundwater contamination since everyone in Opportunity uses wells for our water.

I feel the desired effect would better be served by cleaning up the source of the problem rather than contaminating two other streams as well as the pond area. I also am concerned about further contamination exposure of my two children.

Thank you for letting me air some of my concerns in this matter and to reiterate that I am totally opposed to the tailings pond

RECEIVED
JAN 25 1990
MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Sincerely,
Robin M. Richards
202 Erickson, Opportunity
Anaconda, MT 59711

MISSOULA PHYSICAL THERAPY CENTER
PHYSICAL THERAPY SERVICES
Professional Village, Suite 6
715 Kensington, Missoula, Montana 59801
406-543-4890

RICHARD L. SMITH, M.S., P.T. EDIE G. SMITH, P.T.

January 23, 1990

RECEIVED
JAN 25 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jane Stiles
Dept. of Health & Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Ms. Stiles:

We are writing you in regards to your proposed clean-up plan for the Warm Springs Ponds, part of the nation's largest Superfund site on the Clark Fork River. As citizens of Missoula, we strongly support comprehensive clean-up and eventual removal of wastes from the flood plains in the headwaters of the Clark Fork River. All cleanup plans should be permanent to be effective.

We spend significant time recreating on the Clark Fork River, canoeing and fishing during the summer months. The quality and purity of this water is very important for the delicate ecosystem in Western Montana. We strongly support, at whatever costs, action that will lead to upgrading the quality of this river.

We strongly support the goals of the Clark Fork Coalition:

1. Ponds should be fixed to withstand major earthquakes and floods.

2. All wastes should be removed from the flood plain and disposed of appropriately.

3. Silver Bow Creek and tributaries should be appropriately impounded to capture all flow up to the 100-year flood.

4. Water quality below the settling ponds should meet State standards at flows up to the 100-year flood.

5. All ponds should be built using the most conservative design criteria.

Thank you for the opportunity to submit our comments.

Sincerely yours,

Richard L. Smith and
Edie G. Smith

cc: Clark Fork Coalition

RECEIVED
JAN 26 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

1/23/90

Jane Stiles
Dept. Health & Environmental Sciences
Cogswell Building
Helena MT 59620

Dear Ms. Stiles,

I wish to offer my comments on the proposed Warm Springs Ponds cleanup plan. I feel strongly that the plan should reflect a permanent solution to the mining wastes hazards in this devastated area. Neither the proposed State plan, nor the Arco plan outlines a permanent remedy. As an interim measure, the ponds do need to be stabilized and the appropriate measures taken to prevent polluted sediments from reaching the river. However, more focus should be made on removing pond wastes from the floodplain and placing them in a repository site (such as smelter hill) or finding the technology to extract the metals. Upstream sites should be cleaned up as soon as possible.

To prevent further fish kills, the tailings should be removed from the Mill-Willow bypass + placed in a repository outside of the floodplain. Flood waters could be captured by some combination of upstream impoundments on tributaries and raising the dikes within the pond system.

The bottom line is good water quality in the River below the ponds. The water there should meet minimum State standards at flows up to the 100-year flood level.

No consideration should be given to cost. ARCO should be held FULLY responsible for thorough and permanent clean-up.

Thank you for the opportunity to comment. Lets work toward a hallmark effort to truly rectify past environmental degradation caused by mining in this area. I believe the state has the responsibility to insure that ARCO doesn't get off "easy".

Sincerely,

Jodie Canfield
P.O Box 278
Philipsburg Mt
59858

MISSOULA CITY-COUNTY HEALTH DEPARTMENT

January 19, 1990

RECEIVED
JAN 26 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janie Stiles
Solid and Hazardous Waste Bureau
Montana Department of Health
and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

The Missoula Water Quality Advisory Council (or Group) is composed primarily of technically competent professional (hydrologists, soil scientists, chemists, etc) and functions in an advisory capacity to the City-County Board of Health. Upon our request they have prepared the enclosed report, consisting of eleven items of factual comment or considered opinion and a summary list of six recommended actions.

We believe that all of the points made by the Council are important and well-founded. The set of special emphasis items in its final paragraph deserve careful attention and we wish to highlight several of them:

1. There must be increased participation by interested local groups, including both governmental agencies and citizens' organizations, in every step of the ongoing superfund process.

2. Proposed actions ("alternatives") put forward to date by state and industry sources are flawed in being temporary and/or inadequate.

3. A permanent site must be found for the more heavily contaminated materials within a few tens of miles, at the most, from the critical areas. An elevated dry bench of tertiary-age sedimentary material has been suggested.

We want to place particular stress on the Council's suggestion that the migration of objectionable materials from the Butte-Anaconda-Warm Springs area into the lower Clark Fork (from Deer Lodge to Pend Oreille Lake) can be best controlled by eliminating floods into and from this upper basin area. The placement of dams on German Gulch, Brown's Gulch and Blacktail Creek would accomplish this.

We sincerely hope that these comments and ideas will receive serious consideration by the state and federal officials responsible for the health of the Clark Fork River and the citizens living near it. When

the beautiful people who are now members of first grade classes in Missoula, St. Regis and Sandpoint are themselves grandparents, we want them to feel comfortable about what we did in the 1990's. Our present government at all levels, just has to be willing to meet the costs of a permanent correction of the mistakes that were being made in and around the 1890's.

Sincerely,

Bill McDonald

Bill McDonald, Chairperson
Missoula City-County Board of Health

enc

January 10, 1990

TO: Kathleen Demarinis
Montana Department of Health and Environmental Sciences
Cogswell Bld.
Helena, Montana 59620

FROM: Missoula Water Quality Advisory Group
c/o Environmental Health
Missoula City-County Health Department
301 W Alder
Missoula, MT 5980

RE: **COMMENTS ON THE WARM SPRINGS PONDS PROPOSED PLAN**

Dear Ms. Demarinis,

Enclosed are comments of the Missoula Water Quality Advisory Group (MWQAG) concerning the Warm Springs Ponds Proposed Plan. The MWQAG is a volunteer organization of hydrologists, soil scientists, water chemists, engineers and other water professionals who advise local government agencies and bodies on water quality issues. Our comments include both general views of cleanup strategies and specific proposals for the Warm Springs Ponds.

GENERAL COMMENTS

Clear goals and objectives must be developed for the entire Clark Fork superfund site. All activities should address these goals directly. Water quality and health risk should be controlling factors in establishing goals and determining success of actions. The Warm Springs Ponds Proposals must be presented and evaluated in relationship to these overall goals.

Public participation must increase at the early stages of project definition, research and remedial action development. The projects magnitude demands coordinated action by all groups including local government entities, all applicable govt. agencies, citizens groups, water quality advisory groups and others. Superfund must come out from behind closed doors into the light of traditional environmental review and public participation.

Dividing the CF Superfund Site into subunits appears to foster uneven progress for cleanup efforts. Overall coordination needs to be much more aggressive. Upstream pollution sources need to be stabilized before extensive cleaning of downstream sites.

An overall strategy should be adopted for treating the entire basin which includes:

1 Emergency protection of sites which are creating current pollution problems and for which there are reasonable temporary solutions. This would include the Warm Springs Ponds.

2 Solutions must be permanent and they must be designed to withstand the expected hazards of earthquakes, catastrophic floods and erosion over geologic time.

3 High risk materials should be removed from floodplains and structures such as the ponds or they should be protected from the Potential Maximum Flood. Construction standards for all flood protection measures (dams, dikes, rip-rap, etc.) should be more stringent than those existing for regular water structures. Construction standards should reflect the hazards and costs associated with catastrophic release of toxic materials.

4 Containment of wastes in the upper drainage area. Contaminants should be contained at their current locations kept pending future cleanup. This will centralize the worst of the problem. Flood control/sediment traps should be installed in the upper drainage to protect the lower river system from contamination until upper drainage sediment sources are stabilized. Contaminated sediments in these structures will have to be treated or stabilized in the final cleanup phases.

5 Identification of a suitable, long term disposal site or sites in the CF headwaters area which can receive materials from superfund cleanup projects. The volume of potential materials is too large to consider out-of-state disposal.

6 Every proposed action should be tied to an objective and a water quality standard. Provisions must be clearly spelled out concerning what happens if standards are violated and who has responsibility for taking further action and paying the bill. What happens if it doesn't work?

7 In addition to technical details, we must help the agencies attract and keep the quality of personnel and the commitment of resources needed to move through the cleanup process.

SPECIFIC COMMENTS

A risk assessment of health hazards from contaminated deposits must be a part of the Clark Fork superfund process. Contaminated sediments are spread along hundreds of miles of the CF Floodplain. It is impractical to remove and/or treat this volume of material. We need to identify sites that require removal or stabilization. The concentration and volume of contamination must be considered as well as likelihood of erosion and other factors. A separate part of this risk analysis should evaluate the health risks associated with a catastrophic release of contaminant from the Warm Springs Ponds. We cannot decide what to cleanup or how well if we don't know the risks.

Proposed treatment alternatives should not include water quality violations, even during floods. Both the proposed state plan and the Arco plan for Warm Springs Ponds will violate water quality standards. Although we can live with some pollution during cleanup efforts, we do not think on-going pollution should be designed into these projects. Proposals to route flood flows

through the Warms Springs Ponds would probably not provide acceptable treatment for suspended contaminants. Heavy metals concentrations would likely violate water quality standards because residence time in the pond system would be too short. Upstream flood control impoundments would benefit treatment by releasing flood waters slowly.

Flood control dams in the upper drainage should be thoroughly evaluated as a part of the Warm Springs and other proposals. This alternative has some obvious major benefits. Flood control dams would reduce the magnitude of floods and sharply reduce the impacts of flood events including "catastrophic" runoff and erosion events. "Taming" the river in this way may prevent contaminated materials all along the river system from eroding and spreading throughout the superfund cleanup period. The amount of sediment carried downstream is directly related to the flow so reducing flood flows reduces sediment transport. Reservoirs might be located on drainages above tailings where impoundments will not collect contaminated sediments. This alternative would help protect downstream cleanup efforts such as those at Warm Springs, Deer Lodge and Milltown.

Flood protection measures for the Warm Springs or other ponds need to be significantly better than those proposed. Construction standards should reflect the hazards and costs associated with catastrophic release of toxic materials. Flood protection costs must be compared with removal to outside the floodplain.

SUMMARY

None of the proposed alternatives meet the goals of the MWQAG or the long-term interests of Missoula County. Components of some alternatives have merit as intermediate solutions but do not tie directly to an overall cleanup effort in the drainage. Without risk analyses or cost/benefit analyses it is difficult to judge the adequacy of alternatives or make comparisons.

The Missoula Water Quality Advisory Group recommends that the Warm Springs Ponds Proposed Plan (10/89) be expanded to include additional information and alternatives. These alternatives should address the concerns outlined above with special emphasis on:

* upper drainage flood control reservoirs
* enhanced construction standards for the ponds
* identification of a local, long-term disposal site
* clear water quality standards, sampling schemes and additional cleanup responsibility for violations
* cost/benefit analyses of alternatives designed to reduce health risks
* further evaluation of groundwater contamination and the risks associated with leaving these or other contaminants in the floodplain
* expanded, public participation in this and other superfund projects at the early stages of project conception and design

The Missoula Water Quality Advisory Group appreciate this opportunity to comment on the Warm Springs Ponds Plan and look forward to working with you in the future.

Sincerely,

Barry L. Dutton

Barry L. Dutton
Chairman

cc Missoula City-County Board of Health
Missoula City-County Health Department
Missoula County Commissioners
Missoula City Council

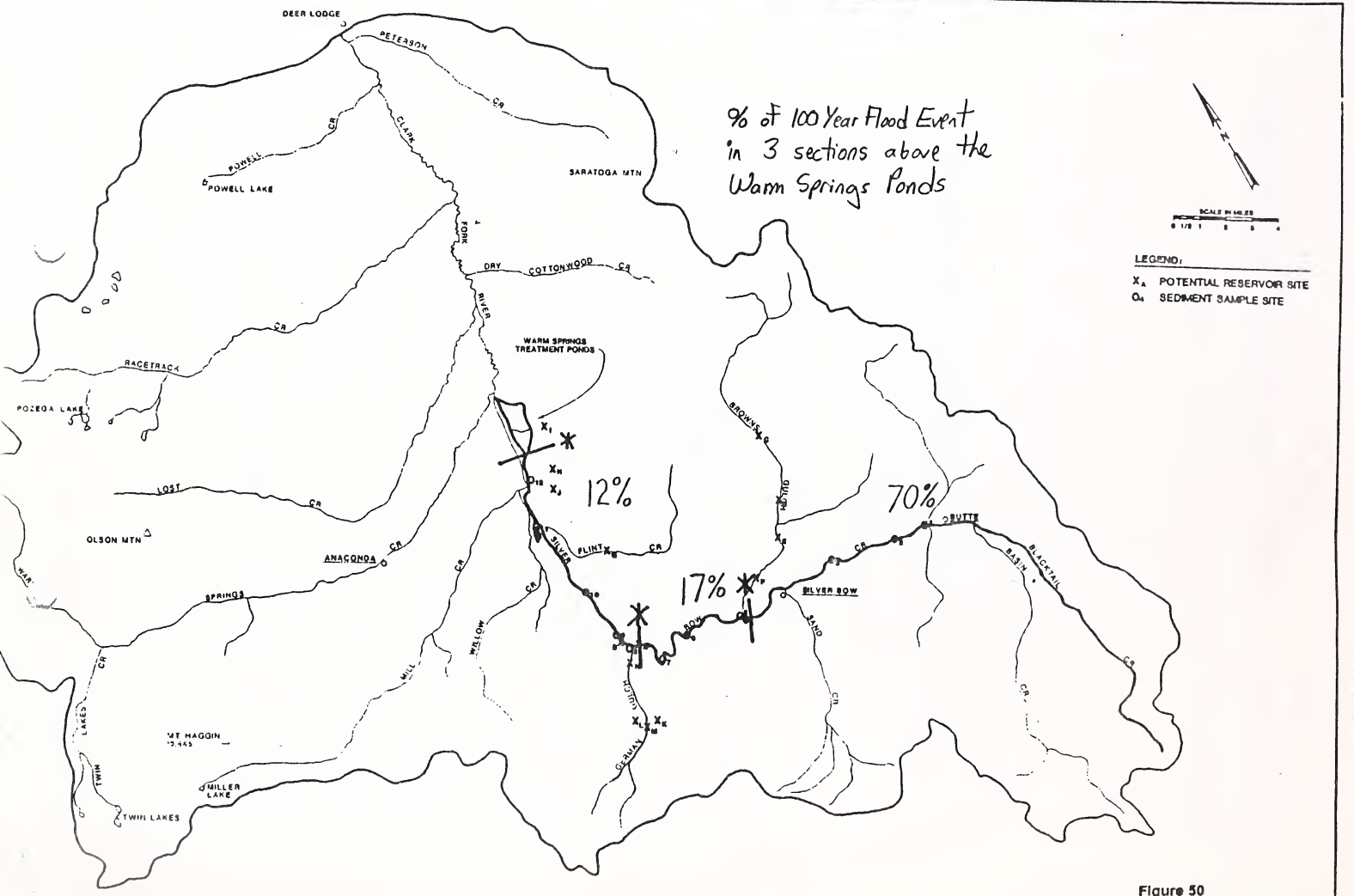

Figure 30
SEDIMENT SAMPLE SITES AND POTENTIAL RESERVOIR SITES
SILVER BOW CREEK FLOOD MODELING STUDY

RECEIVED
JAN 29 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

P.O. Box 99
Hope, Idaho 83836

January 23, 1990

Ms. Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

As very concerned citizens of Hope, Idaho on Lake Pend Oreille we think it is important that you are aware of our environmental concerns as they pertain to Warm Springs Ponds and ultimately - our home.

It seems as though the issues here are really no different than the environmental issues throughout time. The least expensive clean-up method will not solve the problems created by the mining and smelting wastes. That is the reason we are still dealing with **old** problems. It takes people with foresight to not only clean up old problems, but to insure a safe environment for the future. That is clearly ARCO's responsibility under the guidelines of Superfund. Not only must ARCO clean up from the date of purchase of the Anaconda Minerals Company, they **must** clean it all up. And, the clean-up **must** be done in the most permanent manner possible, not the least expensive. Specifically:

- The ponds **must** be fixed to withstand major earthquakes and floods.
- The Mill-Willow bypass tailings **must** be removed from the floodplain in order to prevent fish kills.
- All of the wastes from the floodplain **must** be removed and nearby disposal sites as well as new technologies to extract the metals from the wastes **must** be pursued.
- Water quality below the ponds **must** meet state standards at flows up to the 100 year flood.

And most important, this work **must** begin immediately. ARCO can no longer be allowed to continue to postpone taking responsibility. The environment is **not** getting better.

It is your responsibility to see that these issues are dealt with, keeping what is best for the environment and our future in mind. Not doing so would be a travesty of nature.

Mark L. Story

Melissa L. Miller

Mt. Dept. Health & Environment
Helena, Mt

1/25/90

Dear Mr. Marsh,

This letter is in response to clean up activities on the Warm Springs ponds, and also addresses future clean up activities on the Clark Fork River reclamation project.

It is unfortunate that the process is now at a point where there is pressure for a record of decision to be made, and that different interest groups are arguing about data and research proceedures.

Hind sight being what it is, I see the problem was a lack of cooperation between groups on establishing problems and developing data in the early stages. ARCO developed its plan on their research data, the state agencies did the same, and now the Clark Fork Coalalition seems to be developing their preferred plan. Other pressure groups have also expressed concerns over points of various preferred plans.

This all seems like an unfortunate waste and duplication of experienced and professional data collecting personel.

Unfortunately, on the Warm Springs ponds, this will necessiate some "back tracking"to develop a plan that addresses all the concerned groups.

Hopefully on future reclamation operable units, the initial proceedure of developing issues and problems will include all concerned groups. At this time data and research development should be done collectively and agreed upon beforeit is attempted to develop an optimun plan of reclamation. Public input and education should be done through the process.

If the preliminary steps of defining issues and problems, developing goals, and gathering data were more completely addressed, the actual implementation process should begin earlier and the results be more benificial to all concerned groups and agencies.

Thankyou for allowing me this opportunity to express my comments.

Robert V. Daniels
203 So. Dixon
Anaconda, Mt. 59711

103 Stewart St.
Opportunity, MT 59701

Kathleen DeMarinis
MDHES, Helena, MT 59620

RECEIVED
JAN 29 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Ms. DeMarinis,

Please accept these comments regarding the "Warm Springs Pond Proposed Plan."

For several reasons I have serious reservations concerning the cleanup of the Warm Springs Pond Supe fund site.
First, if the goal is to find a permanent solution to the problem, why not concurrently address the source of the contamination, rather than rely upon further treatment. I believe this sets a bad precedent and reduces incentive to clean upstream contamination.

Second, DNRC dam safety regulations may not be stringent enough because millions of cubic yards of toxic substances pose a far greater risk (acute and long-term) than a dam failure would without these substances.

Third, those flows over 600 c.f.s. which would be routed around the ponds are associated with erosive events, that would contain higher concentration of toxins than normal flows. They should not bypass treatment.

Fourth, I find it unacceptable that MDHES and EPA would replace standards for arsenic and mercury to detectable levels. If the standards are "lowered" (brought up is a poor choice of words) to detectable levels, we have no idea how far "below" health standards we are going. Until we know the margin of safety, why not be conservative and maintain levels below the detection level. It is in the interest of public health.

Fifth, I distrust wording in the Alt. 3 proposal. "The actions of Alt. 3 are expected to comply with state and federal ARARs and are expected to reliably reduce environmental and human health risks." This should read "The actions of Alt. 3 shall comply with state and federal ARAR's and shall eliminate environmental and human health risks at the site."

Sixth, It seems that cost is the primary and controlling issue, not health and environmental issues. Alt. 3 cost 5% of alt. 1 ....

Seventh, I live ~~tired~~ of living surrounded by superfund sites on 3 sides. Let's clean them up right!

Thanks, Ron Pierce

112

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1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

SMILING GULCH RANCH

Lincoln, Montana 59639

P.O. Box 699

January 26, 1990

Department Of Health & Environmental Sciences
Cogswell Building
Helena, Montana 59620

Attention: Jane Stiles

Re: Warm Springs Ponds -Clark Fork River

Gentlemen:

We strongly urge your Department and The EPA to support a permanent solution for the cleanup of the Warm Springs Ponds. Interim measures are just a "Band-Aid" approach to solving the problem and will surely be destroyed by flooding which this area is subject to.

Why not bite the bullet now??? Design the repair work to meet the 100 year flood critea and do it right the first time around. Let's solve this part of the Clark Fork problem now!!!!

I urge your Department to be aware that ARCO COAL CO.'S number one priority is to conserve and protect the company's treasury.To accomplish this task, ARCO COAL CO. will attempt to delay the cleanup and therefore the expenditure of any funds. Please don't let ARCO delay the cleanup any longer, 1990 should be the year of action.

Other States and Governmental agencies are now designing projects to meet 100 year flood critera. Please insist that corrective work on "The Clark Fork River" be built to the more stringent specifications. Any interim solution should include some combination of dike raising and upstream flood impoundments on tributaries and on Silver Bow Creek to capture and effectively treat all flows up to the 100 year flood.

We hope that your Department will support the cleanup of the WARM SPRINGS PONDS utilizing methods that will have as an end result the permanent solution to the problem. Please don't allow the responsible party, ARCO COAL CO. to delay this cleanup project any further.

Sincerely,

S. Daryl Parker

Sherrie B. Parker

Mile High Conservation District
P. O. Box D, U.S.D.A. Building
405 West Legion Avenue
Whitehall, MT 59759
phone: 287-3215

RECEIVED
JAN 29 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 26, 1990

Ms. Janie Stiles
Montana Dept. of Health & Environmental Sciences
Cogswell Building, Room A-206
Helena, MT 59620

Dear Ms. Stiles:

This letter contains a few comments the Mile High Conservation District has on the Warm Springs Ponds Proposed Plan Silver Bow Creek Superfund Site Report which has recently come to our attention.

We have not been involved in your planning process up front. Perhaps this is our fault. There is a need for better communication and coordination. The conservation district has a statuatory responsibility for soil and water conservation.

The headwaters of Silver Bow Creek are within the Mile High Conservation District. Some of our cooperators own land contiguous to the creek. When and if they request assistance we do our best to help. Certainly your program could help us to help landowners and the communities involved. Much of your proposed cleanup efforts are also within the Deer Lodge Valley Conservation District and we would work with them and their cooperators.

Recognizing the problems of water quality for agriculture and the fishery and other uses and benefits, we would like to have you consider the possibility of upstream flood control storage and practices. There are reservoir sites on the tributary streams above the Warm Spring ponds. Development could serve to alleviate flooding at the ponds, as well as contribute greatly to the water quality of the stream by diluting the pollution and also serve many instream and offstream benefits.

Also, we think some of the research done on revegetation of the adjacent polluted sterile areas is promising and should be pursued. It is these areas that contribute much of the pollution to the streams as a result of snowmelt and rainstorms. A good grass cover would alleviate this with proper management.

It is our observation that much of the streambanks are naturally revegetated with grass and willows. Due to the leaching of the heavy metals these areas should not be disturbed.

We could enter into cooperative agreements with the landowners and assist them with their conservation plans if some of the Superfund funding was directed this way. No doubt, landowners would expect 100% cost-sharing.

At this stage we think the above has better possibilities. We would be happy to meet with you to further discuss this.

Sincerely,

Gary Murphy, by KKL

Gary Murphy, Chairman
Mile High Conservation District

GM:KKL

RECEIVED

JAN 29 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 25, 1990

Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Jane,

We have recently witnessed the hundred year drought, fire season and Centennial of our fair state. Can the hundred year flood be far behind? I would urge you to remove all toxic wastes from the Clark Fork and Silver Bow Creek 100 year floodplain as quickly as possible and also protect against earthquakes by using the most concervative design criteria when designing the ponds. We have a chance here to construct a showplace out of a wasteland, providing thriving fish populations and bird refuges out of past mistakes. Don't miss this opportunity to set an example to the rest of the WORLD concerning Montanans interest in making our land clean and beautiful again.

Not only should we have an aggressive cleanup effort, but designing for wildlife and forestation should be spot-lighted. Don't give this a lick and a promise. For the sake of my children and myself, please make us proud to live in the drainage of the largest toxic waste site in the nation, Clark's Fork of the Columbia River. Thankyou.

Sincere wishes for a healthy environment,

John Langstaff

John Langstaff
10800 Grant Creek Road
Missoula, MT 59802

american fisheries society

MONTANA CHAPTER

RECEIVED
JAN 29 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

P.O. Box 967
Kalispell, MT 59903
January 26, 1990

Mr. Vic Andersen
Department of Health and
Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, MT 59620

Dear Mr. Andersen,

We sincerely appreciate the opportunity to comment on the feasibility study for the Warm Springs Ponds Proposed Plan (October 1989). This clean-up effoert will largely determine the future of fisheries resources in the Clark Fork River basin. It is therefore essential that the remedial activities completed will eventually result in permanent elimination of sources of metals to the drainage. Please take the following comments into consideration as you proceed with the clean-up effort:

1.) It is important to include project objectives that will guarantee that fisheries resources in the drainage will be permanently protected. We therefore recommend the following: Remediation of the ponds should result in Gold Book Criteria for metals being met in the Clark Fork River and the Mill-Willow Bypass at all streamflows up to and including the 100-year flood. Once reclamation of Silver Bow Creek is completed, Gold Book Criteria for metals should be achievable at all streamflows.

2.) The 2,000 acre-foot impoundment described in the preferred alternative will not meet the above objective. We therefore recommend construction of the 8,000 acre-foot surge pond or other storage facilities needed to allow total treatment of streamflows up to and including the 100-year flood.

3.) The proposal to route Mill and Willow Creeks into the pond system should be re-evaluated if the source of metals to those creeks can be removed. These streams provide important spawning habitat for Clark Fork River fish.

4.) We support engineering the ponds to withstand major earthquakes and flood events. Design standards to protect against the MCE and half of the PMF appear to accomplish the above.

5.) We would like to see some consideration given to the option of removing and possibly precessing tailings present within the drainage. Perhaps there are technologies available that would offset some of the costs of removal.

6.) It is important that remediation of the ponds will eliminate the problems associated with short circuiting in the winter and wind action during the ice free period. Both of these problems contribute to metals loading in the drainage and have had a negative effect on fish populations.

We appreciate the efforts of the Department of Health and Environmental Sciences in dealing with this enormous problem. We all look forward to the eventual clean-up of the Clark Fork River basin. Please respond to Joe DosSantos (Confederated Salish and Kootenai Tribes, P.O. Box 278, Pablo, MT 59855) who is the chairman of our Environmental Concerns Committee.

Sincerely,

John Fraley, President

23 January, 1990
1917 Missoula Av
Missoula, MT 59802

RECEIVED
JAN 29 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Ms. Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Jane:
Repairing or cleaning up a mess like the Warm Springs Ponds is a complicated, expensive project. But if it is going to be done, it should be done thoroughly and correctly. In determining how the cleanup should proceed, please give serious consideration to the following points:

The ponds should be fixed to withstand major earthquakes and floods. The Mill-Willow bypass tailings should be removed from the floodplain to prevent fish kills. The agencies should order ARCO to perform this work immediately in 1990, not 1991.

The proposed cleanup plans are not a permanent solution. But the work should be done to protect the river while upstream sources are cleaned up. The agencies should look seriously at removing all of the wastes from the floodplain, and aggresively pursue nearby disposal sites and new technologies to extract the metals from the wastes.

The interim solution should include some combination of dike raising and upstream flood impoundments on tributaries and on Silver Bow Creek to capture and effectively treat all flows up to the 100-year flood.

Water quality below the ponds should meet state standards at flows up to the 100-year flood.

All three ponds should be built using the most conservative design criteria. An incremental risk assessment should be done to determine the appropriate level of protection if the wastes are to be left in the floodplain.

The Clark Fork River and its tributaries are a beautiful. useful asset to all of western Montana and northern Idaho. Please do what you can to clean up the Warm Springs Ponds so that the river system will remain intact and unspoiled for future generations.

Sincerely,
James D. Greene
James D. Greene

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JAN 3 0 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Cody Brooks
10155 Grant Creek Rd.
Missoula, Mt. 59802

Jane Stiles
Dept. of Health & Environmental Sciences
Cogswell Building
Helena Mt. 59620

To whom it may concern,

I am extremely concerned about the cleanup plan proposed for the Warm Springs Ponds. The main objective for all parties concerned is a permanent solution. No one wants to deal with this problem down the road. Contamination only spreads and cleanup becomes more costly and less effective. This means that all contaminants must be removed from the flood plain. Pond dikes should be reinforced to prevent flooding during upstream cleanup. A nearby site out of the flood plain to store and process wastes should be found. Metals should be extracted from the wastes at the disposal site. Mill willow bypass tailings need to be removed immediately to prevent further fish kills. Then the hazardous waste can be moved from the ponds and brought to the disposal site at the rate in which the metals can be extracted.

Sincerely,
Cody Brooks

Bitterroot-Mission Group
Sierra Club
P.O. Box 7315
Missoula, MT 59807

RECEIVED
JAN 30 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SUPERFUND/SOLID WASTE BUREAU

Jane Stiles
Dept. of Health and Environmental Sciences
Cogswell Bldg.
Helena, MT 59620

Dear Ms. Stiles,

The Bitterroot-Mission Group of the Sierra Club wishes to go on record as supporting the Clark Fork Coalition proposals for extending the proposed Warm Springs Ponds cleanup plan.

I am sure that you are aware of the Coalition proposals so I won't repeat them here. It makes sense to us both environmentally and economically to spend more now to do a thorough job than to spend less and risk failure in future years.

We appreciate the opportunity to comment on the plan. We hope that the agencies involved will select the best alternatives possible to alleviate the damage and threat of future damage to the Clark Fork ecosystem caused by generations of mistreatment.

Sincerely yours,

Richard A. Faust, Chairman

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JAN 30 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 24, 1990

Neil Marsh
Warm Springs Ponds Coordinator
MDHES
Helena, MT 59620

Re: Comment on the Warm Springs Ponds Proposed Remediation Plan

Dear Neil:

Enclosed is my comment/response to the recently completed feasibility study for the Warm Springs ponds. I want to thank the department for extending the comment period. Without the extension I would not have been able to meet the deadline.

Respectfully Submitted,

David Kebler

David Kebler
Hydrologist and
Concerned Citizen

P.O. Box 2037
Missoula, MT 59806

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JAN 30 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Comment/Response to the Warm Springs Ponds Proposed Remediation Plan

By: David Kebler, P.O. Box 2037, Missoula, MT 59806

PREFACE

It has taken over one hundred years for the present environmental situation to develop in the Upper Clark Fork River and Silver Bow Creek. If the goal of remediation is truly to clean-up the environmental damage for posterity then we need to consider plans that conduct remediation over a nearly equivalent period. The use of "solution for posterity" as opposed to "permanent solution" is a deliberate attempt to set criteria which are achievable. A permanent solution is actually an ideal solution that is both economically, politically, and physically not feasible. The number of years represented by the term "posterity" is open for debate. For the purposes of this comment 1000 years has been chosen. It seems to be in line with observation that there has been no need to clean-up environmental mining damage in the old world created by ancestors 1000 years ago.

A plan enacted over tens of years is quite attractive because it will eventually result in remediation of the environment for posterity, and yet could be done at a cost comparable to the State's preferred alternative. Since it appears that the preferred alternative does not protect the environment for posterity, this comment will focus on possible ways to meet the goal stated above (i.e. solution for posterity). Modified components of the state's preferred plan and the Arco plan would address the short-term (<100 years) environmental concerns. A solution for posterity could then be planned, financed and enacted during this period.

PREMISES FOR DECISION MAKING

The following are several premises that drive the basic choices of a suitable plan for posterity.

1) The Warm Springs ponds must continue to act as a water treatment facility for Silver Bow Creek until all the sites upstream have been remediated. The remediation of upstream sites will occur within the next 100 years.

2) To remediate for posterity means that proposed structures will not require maintenance and are free from geologic and hydrologic hazards for at least 1000 years and preferably longer. If sediments are left in the ponds then neither of these criteria can be met. Even improved dikes will need maintenance every few decades to ensure that they continue to protect against the

geologic/hydrologic hazards for which they were originally designed.

3) Removal of sediments from the floodplain to a suitably constructed, nearby disposal site can be done economically if done over tens of years and with initial capital expenditures in a semi-permanent, efficient sediment transport system (e.g. slurry pipeline).

4) Given that the posterity plan would be to remove the sediments from the floodplain in the next 100 years, improvements to the existing structures would only need to be based on an agreed upon, acceptable risk for failure of the dikes and an acceptable number of unwanted bypasses around the ponds over the next 100 years. This design criteria will result in construction costs below the State's preferred alternative. If removal of the sediments is projected to be accomplished in less than 100 years, additional construction costs will be saved.

   The dike failure risk mentioned above would be based on evaluation of unrecoverable environmental damage and the cost of remediation given failure. The acceptable number of bypass (i.e fish kills) events in 100 years would be determined primarily by fisheries biologists. Neither of these two risks has yet been evaluated.

5) Monies invested today for eventual removal of sediments from the floodplain will have a greater future worth and therefore create additional funds for removal.

6) The cost of a reduced immediate remediation plan plus the cost of funds invested for future removal of sediments from the floodplain will be comparable to the cost of the State's preferred alternative.

DISCUSSION

The following discussion corresponds respectively to the premises enumerated above. The purpose of this discussion is to clarify the basis of the premises, to point out where components of the preferred alternative would be utilized, and where scientific evaluation is weak and should not be relied upon for decision making.

1) The design assumption has been that tailings along Silver Bow Creek and problems at the Berkeley Pit will be cleaned up and resolved in the next thirty years. This appears to be an unrealistic goal. As stated before, it took over 100 years to create the situation, it will take more than thirty to cost effectively and properly clean it up.

2) Prediction of the magnitude of the maximum earthquake, or

discharge of the maximum flood event is inaccurate as well as imprecise. For example, the probable maximum flood (PMF, no associated return period but greater than 1000 years) depends on a number of assumptions. They include future climatic conditions, precipitation event characteristics, antecedent precipitation, ground conditions, and hydraulic channel characteristics. It is impossible to substantiate these assumptions with the given historic record. The only, marginally possible, way would be through studies of the dendrochronological record and/or paleo-flood evidence. Neither of these two methods were employed in the analyses done. Errors in these assumptions are magnified through the use of two hydrologic models (HEC-1 and HEC-2) that were used to derive the maximum discharge and stage. The two independent PMF evaluations point out the imprecision of the analysis. CH2M Hill reports a range of the PMF for Silver Bow Creek from 129,000 to 201,000 cfs below Mill-Willow creek. Arco's consultant reports 80,000 cfs with no range of error!

If sediments are removed from the floodplain then there is no need to rely on these inaccurate and imprecise figures for assuring the safety of the environment for posterity. Prediction of the maximum discharge would only need to be done for a return period significantly less than that associated with the PMF. Prediction of the maximum discharge of 1000 (or less) year flood can be better substantiated than prediction of a PMF (estimation of the 100 year flood maximum discharge has already been conducted by the same two parties).

The following table illustrates how the appropriate return period could be determined based on an acceptable risk of failure for either 30 or 70 years.

Acceptable Risk of failure* (p)	Years until sediments are removed (x)	Design Return Period** (years)
2%	30	1500
2%	70	3500
5%	30	600
5%	70	1400
25%	30	100
25%	70	250

*Assumes failure occurs on the first exceedence

** RT = 1/(1-p^(1/x)); derived from Eq. 3.1.9; Probability, Statistics and Decision for Civil Engineers; Benjamin and Cornell, 1970.

3) The following is an example estimation of the amount of money that would need to be invested today to cover the cost of removal and disposal of sediments from the floodplain.

There are approximately 20 million cubic yards of sediment in the ponds and the bypass at present. Assuming that the amount of sediments could double by the time they are removed, the sediments could be transported and placed in an appropriate nearby disposal site for about $3.00/cu yard, and the net interest rate (i.e. difference between actual and rate of inflation) would be constant at about 4 percent then the following table presents an estimate of the investment needed in present dollars to cover this cost.

Years until sediment removal begins	Needed Investment in present dollars*
30	37 million
70	7.7 million

*Present Worth = Future Worth(1+interest rate)^-years

Of course, the more the cost of transport and disposal per cubic yard can be reduced the less needs to be invested today. Any difference between actual removal cost and the future worth of an investment could be returned to the PRP. This would encourage the development of innovative methods for economical transport and disposal.

4) The Appropriate Requirement presently applied to the dikes at the Warm Springs Ponds is the State dam standard. This standard is inappropriately applied. The intent of the dam standard was to protect against the effects of release of waters behind the dam due to catastrophic failure. The medium of concern at Warm Springs Ponds is not water, but rather toxic sediment. To determine appropriate design criteria an acceptable risk for failure and release of these toxic sediments needs to the evaluated. This evaluation should be based on potential remediation costs and unrecoverable environmental damage. This risk analysis has not been done.

5) See the discussion under number three

6) If, for example, $20 million could be trimmed from the design of the State's preferred alternative then the cost of addressing the present environmental concerns plus eventually removing all the sediment from the floodplain might be as little $80 million. This is based on something significantly less the fractions of PMF presently proposed as a design criteria for improvements to

the dikes. Even if the total present cost was $100 million this is still less than 50 percent of alternative two, the next most expensive proposal that like the preferred alternative does not include eventual removal of all sediment from the floodplain.

RECOMMENDATIONS

The following are a set of recommendations for the State and EPA based on the discussion above.

Do consider construction of a RCRA disposal facility in the vicinity of the Warm Springs Ponds to be originally a repository for tailings excavated from Silver Bow Creek up stream from the ponds and eventually for pond sediments themselves.

Do consider the eventual removal from the floodplain of sediments in the Warm Springs Ponds to a nearby disposal facility.

Do choose a plan that addresses immediate environmental concerns, but will eventually result in clean-up for posterity of contaminated sediments by removal from the floodplain. The plan should be done cost effectively by spreading the remediation over something approaching the next 30-70 years.

Do obtain a third estimation on the magnitude of and stages of floods on Silver Bow Creek. The estimation should include return periods of design interest, and be conducted by the experts at the USGS.

Do determine an acceptable risk of failure of the Warm Springs Ponds' dikes.

Do not use the State Dam Standards for design criteria for improvement of the dikes.

GENERAL COMMENTS

The following is a set of general comments and recommendations directed more specifically to the State's and Arco's plans as a solution to the immediate environmental concerns at Warm Springs Ponds and to the superfund process for the upper Clark Fork.

It seems that remediation plans for the various units need to be considered holistically. For example, poor quality water in Berkeley Pit from acid mine drainage could potentially overflow

into Silver Bow Creek in the next several years. What will be the consequences on the rehabilitated ponds under the current plan? Could they handle the extra loading?

If toxic sediments along Silver Bow Creek could be removed first, there would be no need of the ponds to treat large flood events, and consequently construction costs could be significantly reduced.

Since sediment coming from upstream of the ponds threatens the lifetime of the ponds and forces consideration of a larger pond three or a new sedimentation basin upstream, the State should consider installing small dams for peak flow attenuation on Silver Bow Creek tributaries. Peak discharges have been shown to produce the overwhelming majority of sediment transport and deposition.

Peak discharge attenuation could also stop/slow the transport of toxic sediment/tailings from along Silver Bow creek. Two benefits may be reduced fish kills during flood events, and smaller treatment works at the ponds. An additional non-related benefit would be general flood control.

The toxic sediments in Mill-Willow bypass should be excavated as soon as possible to avoid more fish kills. They could be disposed of, temporarily, by placement into pond two or three.

RECEIVED
JAN 30 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

10795 Oral Zumwalt Way
Missoula, MT 59803

January 26, 1990

Jane Stiles
Department of Health and Environmental Services
Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

I would like to comment on your Agency's and the EPA's plan for the Silver Bow Creek Superfund cleanup. I consider the proposed plan inadequate for the following reasons:

1. It does not repair or modify the pond dikes so that they can withstand a 100 year maximum flood and/or provide control for such an event by building adequate upstream impoundments.

2. State water quality standards are not met at flows smaller than the 100 year flood.

3. It will not prevent fish kills caused by the tailings in the Mill Willow Bypass.

4. It does not provide a permanent solution by either removing the toxic materials from the floodplain or treating the same to render them harmless.

An interim solution has to be found and initiated as soon as possible as the downstream communities are at risk. A major flood or earthquake can set off this time bomb. Any attempt to control costs by assuming risk has to be

balanced against the costs to clean up the entire river if these toxic wastes are released by flood or earthquake. Cleanup of the entire river may not even be possible.

In addition to initiating an adequate interim solution, we should start planning for the permanent solution.

Sincerely,

James E. Daub

JED/fmd
cc: Mr. Peter Nielsen
Clark Fork Coalition

WESTERN MONTANA EMERGENCY PHYSICIANS
500 WEST BROADWAY — ST. PATRICK HOSPITAL — MISSOULA, MONTANA 59802 — 406/543-7271

WARREN GUFFIN, M.D., FACEP
GEORGE SINELNIK, M.D.

DOUGLAS WEBBER, M.D., FACEP
JOSEPH WEYDT, M.D., FACEP

Jan 26, 1990

RECEIVED
JAN 30 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jane Stiles
DHES
Helena, MT

Dear Ms Stiles,

Please accept a few comments regarding the Warm Springs Ponds Superfund site:

I feel the Arco plan is a short-term, low-budget, unacceptable solution to a serious health problem and suggest:

1. The ponds should withstand a 100-year flood
2. Water quality downstream should meet standards at flows up to the 100-year flood
3. Toxic wastes must be removed from the mill-tailings bypass to protect aquatic life

Arco must be held accountable for prevention of the ecological disaster the 100-year flood would cause. Additionally, groundwater contamination will continue, creeping toward the Missoula Aquifer, until toxic wastes are removed from the floodplain - this removal needs to be planned, funded, and scheduled.

WESTERN MONTANA EMERGENCY PHYSICIANS
500 WEST BROADWAY — ST. PATRICK HOSPITAL — MISSOULA, MONTANA 59802 — 406/543-7271

WARREN GUFFIN, M.D., FACEP
GEORGE SINELNIK, M.D.

DOUGLAS WEBBER, M.D., FACEP
JOSEPH WEYDT, M.D., FACEP

(2)

Enclosed is a well-written plea for better water management in our State.

Sincerely,

Douglas Webber, MD

tional waiting period.

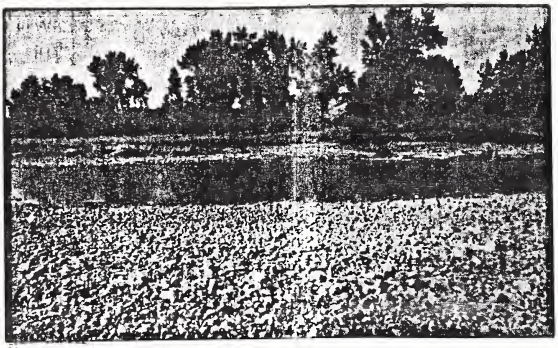
minister recreation facilities largely as a sideline. That'll be a

watching our priceless parks go to seed.

RESOURCE MANAGEMENT

Bad water policies drain cash from state

By HUEY D. JOHNSON



Clark Fork River near Jens, 70 miles east of Missoula

It's sad to see Montana look silly on the 6 o'clock national news. I watched Gov. Ted Schwinden being interviewed regarding the damage to streams and wetlands due to the current drought. "We've done everything that's practical," he said. "But if it's people or fish, we need settle on our municipal needs." The person opposing his views accused the governor of running the state for one group — not people, but cows.

In reality, many states have historically allocated their water for one interest or another, but those days are behind us. Some states with drought conditions on par with Montana's are fortunate to have had pre-crisis legislation in place to ease the dilemma when it came along. Montana is living in the past.

Times have changed. The old policies are so backward they urge ranchers to dry up the streams but offer no way to balance use and avert confrontation. The result is pitting the ranchers against the public — though both love the wildlife resource.

Colorado, for instance, passed a law a few years ago telling its Fish and Game agency to pursue water rights for the purpose of stream protection for wildlife habitat. Montana has a similar law, but it's proven to be largely unworkable — requiring legislative approval for each reservation of in-stream water flows. In the years since Colorado's bill passed, over 7,000 miles of fishing rights have been established. Colorado's cows are still being raised in abundance.

The Colorado law was passed for economic reasons. Jobs and income. A study showed that alfalfa irrigation consumed 27 percent of the state's water and contributed $156 million to the state's economy in 1985. Recreation and tourism, the sector heavily dependent on water-related activities, accounted for 25 times that amount in annual statewide benefits — more than $4 billion and growing.

Montana, I predict, has similar statistics but thus far, no governor has done the obvious — found out. So Montana's recreation and tourism industry is being butchered for the next 10 years with TV and newspaper coverage showing happy cows and dead fish.

You may wonder why I write. I know a bit about water. As the secretary of resources in California, I was responsible for delivering water from Northern California to Los Angeles, and floods and fires, too. I studied the water problems of the Western states. I can assure you, only New Mexico is worse off than Montana.

I know something about Montana because I worked there, too. I started the Nature Conservancy and the Trust for Public Land in Montana. I started an easement program on the Blackfoot River, which now has preserved it, staved off development in the middle of the University's Lubrecht Forest. I fought to get the Bear Tooth Refuge established. I still go on annual trail rides with the University of Montana Alumni Association.

And, like millions of other sportsmen, I buy out-of-state licenses, though as I write this, I am flying to another state to go trout fishing. My meals, motel, car, equipment purchased will go into another state's economy this summer. I'll be there in Montana for elk season, but only because I bought my license before all the publicity on "The Big Dry."

The real issue is a matter of water management, not shortage. I believe we can manage water for wildlife and grow alfalfa, too. The blame is on antiquated water laws, which are correctible — easily correctible — and on elected officials who continue to espouse the outmoded myth that water management means "fish versus people." It doesn't.

The state of Utah recently enacted legislation to ensure stream flows to protect recreation and wildlife values. The bill had the support of conservatives, including Sen. Jake Garn, ranchers and farmers. In fact, the Farm Bureau endorsed the bill, once it saw that sharing the water, rather than competing for it, meant a broader healthier economy for the entire state.

I'm not suggesting we put irrigators out of business. I simply assert that when some of that irrigation water is needed to maintain in-stream flows as permanent public heritage that a portion of that water be committed to permanent flow. I favor compensating irrigators for the small percentage of hay that won't be grown so that a stream might flow.

We need our farmers and ranchers. We need our sport and commercial fishermen, too. We need our hunters, river runners, nature photographers, tourists, hikers, campers and the increasing numbers of folk who care about the quality of their environment and the economic future of their children and grandchildren.

As important as economic factors are, you need only to see a large salmon grounded and struggling in a shallow pool of what had recently been a flowing stream, or a trout dying in the sun, shunted onto a hayfield with the last of diverted water, or to see a once beautiful marsh reduced to a deadly toxic soup, trapping ducks and cranes in what was once their refuge, to truly understand the need for in-stream flow protection.

I propose to offer assistance to the governor of Montana and others. The Water Heritage Trust is a non-profit organization I started to help stretch water. Its purpose is to acquire and preserve water. We acquire water by gift, purchase or trade, to restore sufficient flows in rivers, streams, and wetlands for the benefit of fish, wildlife, plants, people and the whole natural environment.

The Water Heritage Trust has brought together some of the best qualified people to help states conduct resource assessments on water and water quality, much like those done in Colorado, which measured the benefits of free-flowing water to the state in every aspect from ranching to recreation.

Why go this route of changes? Because your state loses millions of outdoor-recreation-tourism dollars with every press report about the disaster. Because if you don't, the voters and the courts will soon drop government regulations on your irrigated agricultural industry. (I'll wager they'll take part of your water and pay you nothing for it.)

Through the Water Heritage Trust, we can assist landowners in alternative approaches that can both maintain agricultural production and be responsive to the growing demands for a permanent fish and wildlife heritage.

People of Montana, Gov. Schwinden — you have a desperate problem. Those of us who share your love for your beautiful state hope that something positive will be done to solve it. In the meantime, we'll be taking our business elsewhere.

Huey D. Johnson is president of the Institute for Resource Renewal in Sausalito, Calif. He served as California's secretary for resources from 1977-1983.

416 E. Story
Bozeman MT 59715
Jan. 27, 1990

RECEIVED
JAN 30 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jane Stiles
Department of Health and Environmental Sciences
Cogswell bldg.
Helena, MT 59620

Dear Ms. Stiles,

It is imperative that a more effective and permanent cleanup, to protect the river and the lake, needs to be done on the Warm Springs Ponds area.

Timing too is important -- since who knows when extensive floods or earthquakes could occur? Work should begin in 1990, no later.

The temporary, interim solution should include some combination of dike raising and upstream flood impoundments on tributaries and on Silverbow Creek to capture and effectively treat all flows up to the 100-year flood.

Water quality below the ponds should meet state standards at flows up to the 100-year flld.

All three ponds should be built using the most conservative design criteria.

Thank you for your consideration of this.

Sincerely,

Mary Vant Hull

Mary Vant Hull

123

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JAN 30 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

E. Terrill Nobles
~~1187 NE~~ Eastside Highway
Corvallis, Montana 59828

1321

27 January 1990

Jane Stiles
Department of Health & Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Ms. Stiles,

Please adopt the recommendations of the CLARK FORK COALITION, made on page 4 of their 12 January 1990 Bulletin, in regards to the cleanup of the Clark Fork.

Over the past 25 years I have fished the Clark Fork, from Warm Springs down to Paradise, with variable and unpredictable results. Elimination of pollutants in the river, and a return to its productive potential is greatly desired.

Utilization of the chemicals in the present waste dumps is a challenge for chemical engineers, who may solve the problems we presently face by making the dumps economically attractive. Look what happened to sawdust piles!

Your office may investigate this possibility, as it oversees protection for the river.

Good luck!

Respectfully,

E. Terrill Nobles

E. Terrill Nobles

copy: Clark Fork Coalition
Box 7593
MSO, MT 59807

file

B R Chapt, T U

RECEIVED
JAN 30 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 29, 1990

Ms. Janie Stiles
Montana Department of Health
and Environmental Sciences
Room B201
Cogswell Building
Helena, MT 59620

Dear Ms Stiles:

RE: Warm Springs Ponds Proposed Plan (WSPPP)

These comments are based on three main premises: 1) that any remediation plan for any part of the Silverbow Creek/Upper Clark Fork River drainage must consider and include the Berkeley Pit and associated mining area in a closed mine situation (which we will see in the future); 2) that Silverbow Creek is reclaimable to the point where it will no longer contribute to the contamination of the Upper Clark Fork and 3) that interment of heavy metal tailings in the bottom of a drainage does not provide a permanent solution.

CERCLA requires permanent solutions and mandates innovation, the Montana Department of Health and Environmental Sciences WSPPP provides neither. You have not provided any real alternatives, only variations on a theme. You propose variations of the solution devised by Anaconda Company in 1911. One hundred years of rent on the environment just came due and we are not willing to pay the price. Trapping the toxic metals at Warm Springs is little better than stopping them at Milltown. Any "solution" which leaves these tailings under water untreated in a drainage is a stop gap measure. Removal, bypass, or detoxification is required. Will we use a band aid approach to the entire drainage: Patch up the Ponds and then puzzle over Milltown? Only to realize that the very top of the drainage is going to bleed all over our muliti-million dollar patch jobs down stream? We must remember where all of this toxic trash came from and that one day the source will plague us also. The Berkeley Pit and hundreds of acres of toxic real estate surrounding it are currently out of the picture. We do not even consider the Berkeley Pit when we discuss Silverbow

Creek and the Warm Springs Ponds because the Berkeley Pit is an active mine.

When the mine closes we will have the biggest part of the clean-up yet to go. The Berkeley Pit must be addressed and a treatment plant constructed to treat its effluent.

Since the Berkeley Pit must be addressed at some point anyway, there is no technical reason not to dump more metal laden wastes into it now. There are political and legal problems with using the Berkeley Pit as a dump. This clean-up, however requires creativity and compromise by people not the environment. The current WSPPP compromises the environment while staying comfortably within all political and legal bounds.

I propose that a slurry line be built to move contaminated materials from the entire reach of Silverbow Creek to the Berkeley Pit.

By doing this, we would be able to concentrate all water treatment efforts at the Berkeley Pit. I would like to see what such a slurry line would cost to construct and operate. It is possible that such a scheme would cost much less and produce a more desirable result than a piecemeal patch job on this devastated drainage.

Cordially,

Jerry Gless

JLG/bp

180877

~~COPPER CREEK CONSERVE~~

~~LLOYD EVANS~~
JUDY EVANS

~~P.O. BOX 505~~
~~NOXON, MONTANA 59853~~

307 W. 2nd #28
Libby, MT 59923

1-29-90

RECEIVED
JAN 30 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Ms Dale,

I am writing to urge a proper clean up of the Warm Springs ponds. The ponds need strengthening to withstand major floods and earthquakes. Upstream impoundments on Silver Bow Creek should be installed. Tailings wastes should ultimately be removed from the floodplain and disposed of properly in nearby, Rye site.

This clean up needs to be started by Arco this year to avoid additional fish kill.

Sincerely,

Judy Evans

MISSOULA
DEPARTMENT OF PUBLIC WORKS
201 W. SPRUCE • MISSOULA, MT 59802-4297 • (406) 721-4700 X-220

JOSEPH L. ALDEGARIE
Director

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E-90-0150

January 29, 1990

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JAN 30 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jane Stiles
Health & Environmental Sciences
Cogswell Building
Helena, Montana 59620

RE: Warm Springs Ponds Cleanup
Clark Fork River & Lake Pend Oreille

Dear Jane:

Enclosed is a copy of Resolution No. 4979 adopted by the City of Missoula on January 22, 1990 regarding the Warm Springs Ponds cleanup.

Sincerley,

Carla J. Krause

Carla J. Krause
Administrative Secretary

Enclosure

RESOLUTION NUMBER 4979

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MISSOULA REGARDING THE PLAN FOR THE CLEANUP OF THE WARM SPRINGS PONDS, THE SITE OF AN EPA SUPERFUND SITE IN THE HEADWATERS OF THE CLARK FORK RIVER.

WHEREAS, THE City of Missoula has the duty and desire to protect the public health, safety, and welfare of its citizens; and

WHEREAS, the ponds are part of the Silver Bow Superfund site, which stretches approximately 145 miles from Butte to the Milltown Reservoir just upstream from Missoula; and

WHEREAS, there are highly toxic pollutants contained in the Warm Springs Ponds which drain into the Clark Fork River; and

WHEREAS, the groundwater aquifer underlying Missoula has been designated a sole source aquifer; and

WHEREAS, the major recharge of this sole source aquifer is from the Clark Fork River; and

WHEREAS, the Clark Fork River is an integral part of the life and vitality of the Missoula community; and

WHEREAS, the pollutants contained within the ponds present a clear and present danger to Missoula, and have the potential for massive environmental damage to the community; and

WHEREAS, the City of Missoula has determined that the plan as presented is not adequate for the permanent or interim protection of the Clark Fork River and the citizens of Missoula;

NOW, THEREFORE, BE IT RESOLVED that the City of Missoula endorses the comments of the Water Quality Advisory Group of the Missoula City-County Health Department in regard to the clean up plan which is attached hereto and made a part of; and

AND FURTHER RESOLVES that:

The ponds should be fixed to withstand major earthquakes and floods. The ponds should be designed and constructed so that all flows up to a 100 year flood are captured and treated prior to release into the Clark Fork River.

Water quality below the ponds should meet state standards at flows up to the 100 year flood.

Solutions must be permanent and designed to withstand all expected hazards. High risk materials should be removed from the floodplain to preclude any possibility of their discharge into the Clark Fork River.

Passed and Adopted this 22nd day of January, 1990.

ATTEST: APPROVED:

Charles C. Stearns
Clerk

David Kaimis
Mayor

STATE OF MONTANA)
COUNTY OF MISSOULA)SS
CITY OF MISSOULA)

I hereby certify that the above and foregoing document is a true and correct copy of Resolution # 4979 as the same appears upon the records of my office as City Clerk for the City of Missoula, Montana.

Date: 1/26/90

Charles C. Stearns
City Clerk
City of Missoula

January 10, 1990

TO: Kathleen Demarinis
Montana Department of Health and Environmental Sciences
Cogswell Bld.
Helena, Montana 59620

FROM: Missoula Water Quality Advisory Group
c/o Environmental Health
Missoula City-County Health Department
301 W Alder
Missoula, MT 5980

RE: COMMENTS ON THE WARM SPRINGS PONDS PROPOSED PLAN

Dear Ms. Demarinis,

Enclosed are comments of the Missoula Water Quality Advisory Group (MWQAG) concerning the Warm Springs Ponds Proposed Plan. The MWQAG is a volunteer organization of hydrologists, soil scientists, water chemists, engineers and other water professionals who advise local government agencies and bodies on water quality issues. Our comments include both general views of cleanup strategies and specific proposals for the Warm Springs Ponds.

GENERAL COMMENTS

Clear goals and objectives must be developed for the entire Clark Fork superfund site. All activities should address these goals directly. Water quality and health risk should be controlling factors in establishing goals and determining success of actions. The Warm Springs Ponds Proposals must be presented and evaluated in relationship to these overall goals.

Public participation must increase at the early stages of project definition, research and remedial action development. The projects magnitude demands coordinated action by all groups including local government entities, all applicable govt. agencies, citizens groups, water quality advisory groups and others. Superfund must come out from behind closed doors into the light of traditional environmental review and public participation.

Dividing the CF Superfund Site into subunits appears to foster uneven progress for cleanup efforts. Overall coordination needs to be much more aggressive. Upstream pollution sources need to be stabilized before extensive cleaning of downstream sites.

An overall strategy should be adopted for treating the entire basin which includes:

1 Emergency protection of sites which are creating current pollution problems and for which there are reasonable temporary solutions. This would include the Warm Springs Ponds.

2 Solutions must be permanent and they must be designed to withstand the expected hazards of earthquakes, catastrophic floods and erosion over geologic time.

3 High risk materials should be removed from floodplains and structures such as the ponds or they should be protected from the Potential Maximum Flood. Construction standards for all flood protection measures (dams, dikes, rip-rap, etc.) should be more stringent than those existing for regular water structures. Construction standards should reflect the hazards and costs associated with catastrophic release of toxic materials.

4 Containment of wastes in the upper drainage area. Contaminants should be contained at their current locations kept pending future cleanup. This will centralize the worst of the problem. Flood control/sediment traps should be installed in the upper drainage to protect the lower river system from contamination until upper drainage sediment sources are stabilized. Contaminated sediments in these structures will have to be treated or stabilized in the final cleanup phases.

5 Identification of a suitable, long term disposal site or sites in the CF headwaters area which can receive materials from superfund cleanup projects. The volume of potential materials is too large to consider out-of-state disposal.

6 Every proposed action should be tied to an objective and a water quality standard. Provisions must be clearly spelled out concerning what happens if standards are violated and who has responsibility for taking further action and paying the bill. What happens if it doesn't work?

7 In addition to technical details, we must help the agencies attract and keep the quality of personnel and the commitment of resources needed to move through the cleanup process.

SPECIFIC COMMENTS

A risk assessment of health hazards from contaminated deposits must be a part of the Clark Fork superfund process. Contaminated sediments are spread along hundreds of miles of the CF Floodplain. It is impractical to remove and/or treat this volume of material. We need to identify sites that require removal or stabilization. The concentration and volume of contamination must be considered as well as likelihood of erosion and other factors. A separate part of this risk analysis should evaluate the health risks associated with a catastrophic release of contaminant from the Warm Springs Ponds. We cannot decide what to cleanup or how well if we don't know the risks.

Proposed treatment alternatives should not include water quality violations, even during floods. Both the proposed state plan and the Arco plan for Warm Springs Ponds will violate water quality standards. Although we can live with some pollution during cleanup efforts, we do not think on-going pollution should be designed into these projects. Proposals to route flood flows

through the Warms Springs Ponds would probably not provide acceptable treatment for suspended contaminants. Heavy metals concentrations would likely violate water quality standards because residence time in the pond system would be too short. Upstream flood control impoundments would benefit treatment by releasing flood waters slowly.

Flood control dams in the upper drainage should be thoroughly evaluated as a part of the Warm Springs and other proposals. This alternative has some obvious major benefits. Flood control dams would reduce the magnitude of floods and sharply reduce the impacts of flood events including "catastrophic" runoff and erosion events. "Taming" the river in this way may prevent contaminated materials all along the river system from eroding and spreading throughout the superfund cleanup period. The amount of sediment carried downstream is directly related to the flow so reducing flood flows reduces sediment transport. Reservoirs might be located on drainages above tailings where impoundments will not collect contaminated sediments. This alternative would help protect downstream cleanup efforts such as those at Warm Springs, Deer Lodge and Milltown.

Flood protection measures for the Warm Springs or other ponds need to be significantly better than those proposed. Construction standards should reflect the hazards and costs associated with catastrophic release of toxic materials. Flood protection costs must be compared with removal to outside the floodplain.

SUMMARY

None of the proposed alternatives meet the goals of the MWQAG or the long-term interests of Missoula County. Components of some alternatives have merit as intermediate solutions but do not tie directly to an overall cleanup effort in the drainage. Without risk analyses or cost/benefit analyses it is difficult to judge the adequacy of alternatives or make comparisons.

The Missoula Water Quality Advisory Group recommends that the Warm Springs Ponds Proposed Plan (10/89) be expanded to include additional information and alternatives. These alternatives should address the concerns outlined above with special emphasis on:

* upper drainage flood control reservoirs
* enhanced construction standards for the ponds
* identification of a local, long-term disposal site
* clear water quality standards, sampling schemes and additional cleanup responsibility for violations
* cost/benefit analyses of alternatives designed to reduce health risks
* further evaluation of groundwater contamination and the risks associated with leaving these or other contaminants in the floodplain
* expanded, public participation in this and other superfund projects at the early stages of project conception and design

The Missoula Water Quality Advisory Group appreciate this opportunity to comment on the Warm Springs Ponds Plan and look forward to working with you in the future.

Sincerely,

Barry L. Dutton

Barry L. Dutton
Chairman

cc Missoula City-County Board of Health
Missoula City-County Health Department
Missoula County Commissioners
Missoula City Council

JAN 26 '90

127

TO WHOM IT MAY CONCERN,

JUST A NOTE TO SAY THAT I AM ANOTHER CONCERNED CITIZEN ABOUT THE CLARK FORK CLEANUP PROJECT. I PREFER A LONG RANGE SOLUTION, ONE THAT WILL PROTECT THE RIVER FROM UNEXPECTED FLOODS. I UNDERSTAND THE ENORMITY OF THIS PROJECT, BUT IT IS ABSOLUTELY ESSENTIAL TO CONDUCT AS THOROUGH A CLEAN UP AS POSSIBLE.

SINCERELY Brian Jameson

116 NORTH AVE E
MISSOULA, MT 59801

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BONNER - BOUNDARY BOARD OF REALTORS, INC.

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JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Solid and Hazardous Waste Bureau
Montana Department of Health and
Environmental Sciences
Cogswell Building
Helena, Montana 59620

January 25,1990

Dear Bureau Staff:

We are the 102 members of the Bonner-Boundary Board of Realtors. The $34,000,000 business we manage depends upon the preservation of the environment that constitutes the value of our area. We must live with the problems created in Montana and transported down the Clark Fork River into our homes. Around 90% of the annual recharge of Lake Pend Oreille comes from the river, so we who live, work and recreate around the lake are concerned with all decisions that affect the quality of the Clark Fork. Decisions involving the Superfund sites on the upper river are of critical importance to us because they will profoundly affect water quality in the Clark Fork, and thus Lake Pend Oreille, for centuries.

Correcting problems at the Warm Springs Ponds is especially crucial because of their importance as a safety valve that helps keep mining pollutants from migrating downstream. We strongly recommend the EPA and health department adopt an alternative from its ponds feasibility study that ultimately leads to permanent elimination of pollution from the study area.

The agencies should:

- adopt an alternative that combines raising the pond dikes and constructing an upstream impoundment for handling flood flows;

- ensure the ponds and all upstream impoundments are bolstered to withstand major floods and earthquakes, and include design criteria that guarantees flood waters are effectively treated before being discharged from the pond system;

- ensure tailings are removed from the Mill-Willow bypass, and if it is to be used for Mill and Willow Creek discharges, that the pollution sources of those creeks be eliminated;

- guarantee that water discharged from the ponds up to at least a 100-year flood event meet state water quality standards;

- recognize that this feasibility study does not include a permanent cleanup solution, but instead prescribes stopgap measures that ensures the ponds are stable and working and that fish kills will be reduced so that Superfund can concentrate on upstream pollution sources;

- analyze in detail engineering alternatives for eventual removal of all wastes from the floodplain, including studying metal removal technologies and siting of a local permanent repository.

The Lake Pend Oreille area offers a quality of life matched by few areas in the West. People come here because of the lake's premium water quality, recreation and fish. But aside from the amenities, the lake is the hub for a bustling tourism and services industry. It also attracts outside investors and is bolstered by a transfer-fund economy, largely represented by retirees. Tourism is Idaho's second largest industry, accounting in 1988 for nearly 5.5 million jobs with an annual payroll of $6.5 billion. According to a 1988 state report, tourism accounts for more than $1.2 billion in expenditures in Idaho. The Idaho Panhandle and especially the Lake Pend Oreille area, contribute a large chunk of those expenditures and jobs.

To maintain this economic vitality we must maintain the water quality of Lake Pend Oreille. That means maintaining and improving the quality of the Clark Fork River.

Please help to keep our area prestine. Please protect our livlihoods, please upgrade the Warm Springs Ponds.

Sincerely,

Warren A. Wanamaker
President

cc: Ruth Watkins, Clark Fork Coalition

WAW:bp

917 West Broadway
Butte, Montana 95701

January 29, 1990

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JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janie Stiles
c/o Montana Department of Health
and Environmental Sciences
Room B201 Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

Since attending many of the meetings and hearings held to discuss MDHES/EPA Proposed Plans for the Warm Springs Ponds, I have been considering how best to respond to what seem to be some fundamental flaws in both the process and the products of the studies that generated the WSPPP. My remarks are intended literally as constructive criticism, because your agency's procedures at the Warm Springs site **must** be improved as you approach the other sites in the area--the Berkeley Pit, the Colorado Tailings, Smelter Hill in Anaconda, streamside tailings along Silver Bow Creek, and so on.

I'm troubled, like the folks in the Gregson/Opportunity area, by the plan to create an upstream surge tank to be used for major flood events that exceed the ponds' intake capacity. I'm bothered, as are the Clark Fork Coalition people, about the calculations of the PMF and the subsequent dike construction plans. I'm skeptical about the prospects--voiced by both your agency's plan and by ARCO's Bob Dent--of developing both fisheries and waterfowl breeding areas there (if federal law requires us to give up lead shot, how can a federal agency advocate establishing breeding ponds for migratory waterfowl at a site loaded with lead and other toxics?)

But these are nit-picky issues compared to some more fundamental ones.

At one of the meetings, I asked a spokesman from CH2M Hill to estimate the total volume of contaminants currently stored in the ponds, and was told "19 million tons." A nice, scary huge round number. I asked what consideration had been given to moving the material to a permanent storage facility. He simply shrugged and asked (as if I was crazy) "Do you have any idea how much space it would take to store 19 million tons of this stuff?"

That shrug and the rhetorical question symbolize the basic problem here: the RI/FS process seems to have eliminated **removal** and/or **treatment** as options without ever

giving them serious consideration. Nowhere in any of the documentation I've looked at have I seen them discussed. Thus one of the most "permanent" alternatives is not even listed as an alternative--and the existing "alternatives" are thus variations on an unquestioned theme.

It is a theme that I believe must be questioned. If the reasons for rejecting such an obvious solution were good ones, they should have been aired rationally before the public, rather than being buried under the rug with a tossed-off phrase to the effect that "it would cause more problems than it would solve to try to remove these materials."

My conversation with the CH2M Hill engineer that evening concluded with what has to be the most devastating admission he could make. When I responded to his dismissal of removal options with the half-serious question--"then this proposal essentially makes the Warm Springs Ponds into a RCRA storage facility?"--he heartily agreed. Maybe I'm missing something, but it's never seemed to be an environmentally sound practice--certainly not one that EPA would favor--to **choose to** establish a permanent repository for toxic wastes in a flood plain! Now, however, DHES and EPA seem to be putting their joint seal of approval on one more principle / practice that contradicts both official policy and common sense.

In summary, the shortcomings of the WSPPP are certainly serious in and of themselves; and I'm not much comforted by the ARCO alternative, except that it does the same thing cheaper. But more than the particulars of the choices available, it is the process by which your agency / agencies arrived at this proposal that really scares me. The hidden assumptions (never made public) seemed to drive the process away from the search for **truly permanent** solutions: the **assumed** impossibility of removal or treatment; the **assumed** establishment of the Ponds as a de facto RCRA hazardous waste storage facility.

Isn't that what got us into this mess in the first place?

I said I'd be constructive. Let me conclude with a few suggestions for improving your work both with the Ponds, and with the whole complex of NPL sites at the headwaters of the Clark Fork:

- Gather public input during the RI/FS stages, and do it more systematically and aggressively: flawed assumptions can be exposed, and sound but controversial ones can gain early public support that may be needed later;

- Coordinate your planning process better among the various sites, so that plans, say, for the Warm Springs Ponds can be more positively correlated to plans for streamside tailings, and the Berkeley Pit, and so on. The "permanence" of the WSPPP seemed to hinge on too many unanswered questions about plans for Silver Bow Creek upstream;

- Keep working in increments that show action (whether removal & renovation actions, like next summer's ARCO-funded work on Mill-Willow Bypass, or experimental reseeding of streamside tailings), but be more cautious about claims of "permanent" solutions; I know that's what Superfund is supposed to buy us, but the word just sets off alarms for everyone involved. We need more to know that EPA / DHES / Superfund is not just dropping a one-time fix (which may not work) on us, but that they will be here to monitor these designated sites as long as they are needed.

  In spite of all the calls for "no more studies," I truly believe it's not a quick (and specious) "permanent" fix we want from your agencies, but a sense that you will permanently provide continuous, aggressive, and innovative oversight over the long-term cleanup at these sites.

I recognize the difficulties of the task you folks have on your shoulders. In my attendance at these meetings, I've been impressed with the hard work and the many talents that have contributed to the process. Specifically, I commend you for your agency's publications on the progress at the site. Principally, my message is simply to encourage you to bring us into your confidence earlier in the process--either through those same publications, general public meetings, special meetings with targeted groups, or special media presentations. You'll find consensus more easily arrived at, you'll arouse less strident opposition in the late stages of the process, and most importantly, you'll--**we'll all**--arrive at a solution we can all live with.

Sincerely,

William B. Macgregor

William B. Macgregor

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JAN 31 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Montana Dept. Health and Environmental Sciences
Kathleen Demarinis
Helena, Mt. 59620

Comments on Warm Springs Ponds Proposed Plan

Submitted by: Chris Marchion
2105 Garfield
Anaconda, Mt. 59711

I find the proposed plans for cleanup of the Warm Springs ponds to be complex and I am not qualified to evaluate the potential success of the plans to accompolish what they are designed to do. I assume the plans were designed by qualified persons who performed the necessary research to assure that each proposal will be successful in achieving its goal.

I will comment on the goals of the preferred proposal. I oppose any proposal which does not permanently contain all of the contaminants in a way which protects the environment from further threat of contamination. To implement a plan with a designed life of less than one life time is not acceptable. This contamination must be permanently contained or nuetralized. It is a crime that industry was allowed to create this mess and it would be an equal crime for the generation that was rewarded by the economic activities that caused this mess to gloss over the problem and leave the burden of a permanent solution to some future generation that received little or no benefit from the prior years of mining and smelting. It seems ironic that in the state centennial year a state agency would recommend a proposal that leaves future generations the legacy of finding a permanent solution for the largest contamination problem in our nation.

I recognize the economic burden of trying to return the contaminated area to its original productive capacity. The cost of such a proposal certainly outweighs the benefits that would result. However, all of the proposals would leave Deer Lodge County handicapped with a large parcel of ground with little or no economic value. In addition, even when the site is successfully cleaned up the stigma of past contamination will limit development around the site. You must also consider the public has been and will continue to be deprived of a major source of wildlife and recreational opportunities because they were destroyed by this contamination.

Any plan which does not return this land to its full productive capacity must include mitigation money to Deer Lodge County to compensate for lost economic potential. Also the Montana Dept. of Fish, Wildlife, and Parks should be given money to purchase or enhance wildlife and public recreational opportunities in this area.

Chris Marchion

1-26-90

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JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Frank Williams Rives
2030 Kensignton Ave.
Missoula, MT 59801

Kathleen DeMarinis
Montana Department of Health
and Enviromental Science
Helena, MT 59620

I will begin by thanking the Enviromental Protection Agency and the Montana Department of Health and Enviromental Science for extending the period of public comment until the end of January 1990, in order that citizens might have adequate time to respond to an issue which will concern Montanans for decades to come.

I attended the public meetings that were held at St. Patrick's Hospital in November and December. If these meetings were any indication of public opinion about the cleanup of the Warm Springs Ponds, then Alternative 3 as offered is going over like a lead balloon. Not one person (outside of the government agencies involved) that I can recall favored Alternative 3 as it has been proposed. Public opinion seems to indicate MDHES must either forget Alternative 3 or modify it drastically.

This letter is the second letter I have written to your agency about the Warm Springs Ponds cleanup. My first letter, dated December 23, 1989, expresses my views on the Silver Bow Ponds cleanup rather completely. I will not rehash my views in full again.

I would, however, like to restate my objections to Alternative 3 as offered. Admittedly Alternative 3 would be a vast improvement over what we have now at the Warm Springs Ponds. But the plan as proposed is simply inadequate to deal with the problem of future and continued contamination of the Clark Fork River. Alternative 3 calls for the spending of millions of dollars to do a half-baked job.

I still prefer Alternative 2, because it is the plan which will best protect the Clark Fork River and the human and non-human inhabitants of the river valley.

However, if MDHES insists on instituting Alternative 3 it is imperative that the following modifications are made in Alternative 3 to see that the Clark Fork River and the public health are protected.

1.) The Warm Springs Ponds system is protected from the Maximum Credible Earthquake and the Probable Maximum Flood.

2.) An 8,000 acre-feet upstream impoundment is constructed to hold floodwaters and to serve as a conventional sedimentation basin.

3.) Water quality below the Warm Springs Ponds meet state standards even during floods.

4.) Steps are taken to prevent further contamination by removing contaminants from Mill and Willow Creeks and the Mill-Willow bypass.

I am a member of the Clark Fork Coalition, and I stand four-square behind all of the reccommendations of the coalition concerning the Warm Springs Ponds cleanup.

Please do not settle for only partial protection of the Clark Fork river valley and its inhabitants. The enviromental health of Montana's largest river depends your decision. The public health of perhaps 100,000 Montanans depends on your decision.

Adopt Alternative 2, or modify Alternative 3. The citizens of Montana deserve full protection from mining waste contamination. We cannot afford further fish-kills. We do not deserve further contamination of our water-table.

Thank you for your time and consideration. I appreciate the efforts being made by state and federal officials to include the public in the decision-making process.

Sincerely,

FWRives

Frank W. Rives
January 29, 1990

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

DICK BARONI
512 NORTH SIXTH ST.
SANDPOINT, IDAHO 83864
JANUARY 24, 1990

JANE STILES
DEPT. OF HEALTH AND
ENVIRONMENTAL SCIENCES
COGSWELL BUILDING
HELENA, MT 59620

I AM CONCERNED ABOUT THE SILVER BOW CREEK SUPERFUND SITE. I REALIZE IT IS A COMPLICATED MATTER AND THAT THERE ARE DIFFERENCES OF OPINION REGARDING THE BEST COURSE OF ACTION REGARDING THIS SITE. THE FOLLOWING ARE THE CONCERNS I HAVE ABOUT THE SITE:

1. THE PONDS SHOULD BE REINFORCED OR REBUILT TO NOT FAIL DUE TO A MAJOR EARTHQUAKE OR FLOOD. THE WORK TO DO THIS SHOULD BEGIN AS SOON AS POSSIBLE, AND THE MILL-WILLOW BYPASS TAILINGS SHOULD BE REMOVED FROM THE FLOODPLAIN SO AS TO PREVENT THE POSSIBILITY OF FUTURE FISH KILLS.

2. IT IS IMPORTANT THAT ALL WASTES BE REMOVED FROM THE 100 YEAR FLOOD PLAIN. ALTHOUGH "100" YEAR IMPLIES A SLIGHT CHANCE STATISTICALLY, THE TRUTH IS THAT WE COULD HAVE 2 YEARS IN A ROW THAT WOULD MEET OR EXCEED THIS LEVEL.

3. ALL FLOWS UP TO THE 100-YEAR FLOOD SHOULD BE CAPTURED AND TREATED BEFORE THEY ARE DISCHARGED TO THE CLARK FORK RIVER. WHILE UPSTREAM SOURCES OF HAZARDOUS WASTE ARE CLEANED UP, STEPS MUST BE TAKEN TO PROTECT THE CLARK FORK RIVER FROM HAZARDOUS FLOWS.

4. IF WASTES ARE TO BE LEFT IN THE FLOOD PLAIN, CONSTRUCTION AND ENGINEERING OF THE RETAINMENT FACILITIES SHOULD BE OF THE MOST CONSERVATIVE ESTIMATES POSSIBLE.

I APPRECIATE YOUR TIME FOR ALLOWING ME TO EXPRESS MY CONCERNS. THANK YOU VERY MUCH.

SINCERELY,

Dick Baroni

DICK BARONI

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JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
& ENVIRONMENTAL SCIENCES
HAZARDOUS WASTE BUREAU

Jane Stiles
Department of Health & Environ...
Cogswell Building, Helena MT.

Dear Ms Stiles,

I am concerned about the proposed plan for the Warm Springs Ponds. My main concern is that these tailings should not remain in the floodplain. We need a permanent solution for these ponds instead of another band-aid. I am also concerned that the proposed plan only includes the 10-yr flood mark, a minimum of the 100-yr flood should be captured and treated. With all the wastes left in the 100-yr flood plain we are just waiting for a disaster to occur. These ponds should be fixed right. Why waste $30 million on a solution that is only partial and indefinite?

We saw what can happen in a heavy rainstorm last summer. We need to see that slick fish kills and release of toxins are prevented in the future. Floods, earthquakes and heavy rains are bound to happen eventually, the ponds need to be extremely secure to prevent unexpected releases. I am also concerned about groundwater contamination around these ponds.

We need a permanent and viable solution - Please see that it happens for

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OCT 18 1991
MONTANA DEPARTMENT OF HEALTH
& ENVIRONMENTAL SCIENCES
WATER QUALITY BUREAU

all of us and for all of the creatures who depend on the Clark Fork river for sustenance and life. Thank you.

Sincerely,

Mary Leonard
934 W Pine
Mslo, MT
59802

TROUT UNLIMITED

BIG BLACKFOOT CHAPTER

"Dedicated to preserving the fishery of the Big Blackfoot River and its tributaries."

P. O. Box 878 Lincoln, Montana 59639 Phone 406-362-4955

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JAN 31 1990

MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES SOLID & HAZARDOUS WASTE BUREAU

Directors:

Bonnie Brewer Bonner

Dan Coughlin Helena

Larry Dodge Helmville

Zella Erickson Greenough

Betty duPont Missoula

Becky Garland Lincoln

Mark Gerlach Lincoln

Merl Gunsch Seeley Lake

Mark E. Jones Frenchtown

LeRoy Kemmesat Lincoln

Land Lindbergh Greenough

Jim J. Masar Missoula

Daryl Parker Lincoln

Sherrie Parker Lincoln

Paul Roos Helena

John Stone Greenough

January 31, 1990

Jane Stiles
Department of Health & Environmental Sciences
Cogswell Building
Helena MT 59620

Dear Ms. Stiles:

The Big Blackfoot Chapter of Trout Unlimited would like to register our comments concerning the Warm Springs Ponds cleanu plan. We consider the success or failure of the cleanup of the Silver Bow Creek Superfund Site of paramount importance to Montana and the nation. The effectiveness of the plan used on the Ponds will determine to a large extent the success of the entire 145 mile project.

First, the agencies should order ARCO to fix the ponds to withstand major earthquakes and floods and the Mill-Willow bypass tailings should be removed from the floodplain. This work should be done in 1990.

Second, even though the proposed plans are not a permanent solution, the work should be done to protect the river while the upper river is cleaned up. We hope that serious consideration is given to removing all the wastes from the floodplain and all effort is made to use the most modern technology to extract metals from those wastes.

Third, some combination of dike raising and upstream flood impoundments on tributaries and Silver Bow Creek to capture and effectively treat all flows up to a 100-year flood should be included in the interim solution. This should result in water quality below the ponds to meed state standards at flows up to the 100-year flood.

Fourth, the most conservative design criteria should be used in dealing with all three ponds. If the wastes are to be left in the floodplain, then an incremental risk assessment should be done to determine the appropriate level of protection.

We appreciate the opportunity to give input and will watch the actions taken with great interest. Thank you.

Sincerely,

Paul S. Roos

Paul S. Roos
Vice President, BBCTU

montana wildlife federation

EDUCATION – CONSERVATION

P.O. Box 6537
Bozeman, MT 59715
(406) 587-1713

STATE AFFILIATE OF THE
NATIONAL WILDLIFE FEDERATION

EARTH DAY – EVERY DAY

January 30, 1990

Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building
Helena, Montana 59620

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JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Ms. Stiles

Thank you for extending the comment period on the Warm Springs Ponds/Silver Bow Creek Super fund Site.

The Montana Wildlife Federation believes strongly that there is a very important health risk to thousands of Montanans. Suggested delays in clean-up until 1991 are unacceptable. The risk of a moderate earthquake or a major flood in the interim is simply too great considering the 19 million cubic yards of hazardous waste that are impounded in the ponds. Not only does a delay increase risks to human health in the area, but it also presents a risk to important fish and wildlife populations as has been demonstrated by recent fish kills in the area even with a small fraction of the waste being released.

The Montana Department of Health and Environmental Sciences' plan to leave wastes in the flood plain and protect against one half of the probable maximum flood is not sufficient. The deposition of the Mill-Willow wastes into the ponds within the flood plain is also unacceptable and short sighted. There will be an over-half probable maximum flood in the future.

ARCO's proposal and the agency's proposal do not meet the permanent minimum needs for the safety and welfare of Montanan's and Montana's wildlife. Neither proposal even meet minimum standards for an acceptable interim solution.

At a minimum, interim clean-up should:

1. Not allow contaminated Silver Bow Creek flows to be by-passed around the ponds or to be sufficiently treated during any flow smaller than a 100-year flood.

2. Prevent fish kills caused by tailings in the Mill-Willow bypass.

3. Meet state water quality standards when flows are smaller than a 100-year flood.

4. Prevent catastrophic release of pond sediments during major floods and earthquakes.

5. Prevent serious groundwater pollution near the ponds.

montana wildlife federation

EDUCATION – CONSERVATION

P.O. Box 6537
Bozeman, MT 59715
(406) 587-1713

STATE AFFILIATE OF THE
NATIONAL WILDLIFE FEDERATION

EARTH DAY – EVERY DAY

6. Allow a more permanent future remedy, such as waste removal from the floodplain and clean up of polluted groundwater.

This site should be permanently cleaned up with removal of all the wastes from the flood plain. Interim plans should stabilize and engineer ponds to prevent pollution by-passes to the river. All flows up to at least the 100-year flood level should be captured and treated before they are discharged into the Clark Fork. ARCO's 10-year flood level is simply not adequate. MWF supports raising of dikes in the ponds and suggests that new flood control ponds be built on upstream tributaries or on Silver Bow Creek to contain floods and provide water for summer instream flows.

Mill-Willow bypass tailings should be removed from the flood plain and deposited at a nearby site, out of the flood plain.

All three ponds should be built using the most conservative design criteria. An incremental risk assessment should be done to determine the appropriate level of protection if wastes are left in the flood plain.

Sincerely,

Rich Day, Executive Director

RECEIVED
JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Jane Stiles,

I am writing in relation to the proposed plan for cleaning up the Warm Springs Ponds. I am very pleased to hear that cleanup efforts are being planned as this is sorely needed at many sites along the Clark Fork River. I have several concerns and comments that I would like to make in relation to the proposal.

First, it seems to me the state's proposal is far too conservative in the level of protection that needs to be provided, considering the down stream risks at hand. Specifically, it seems prudent to me that we should be planning to have the ponds withstand a larger flood, ie 100 yr flood, or have the tailings removed from the floodplain. Second there doesn't seem to be anything in this that will lead to a long term solution. Who will be responsible for the long term maintenance and who pays for it? Second from what I have learned the three ponds should all be built to the same level of protection and the level determined by an incremental risk assessment if the wasstes are to be left in the foodplain. Thirdly, I fear the proposal is being too concerned with the immediate cost of the project and not concerned enough with the long term resolution of this very complicated mess. I urge that we look at a solution that will, to the best of our current technology and abilities, provide a permanent solution so that our children or grand children are not having to clean it up again at some future date. Let's bite the bullet and do it the best way we know how the first time.

Thank you for the opportunity to comment. Being a public employee at a different level, I know that the instincts are to do the best job possible. I encourage all of you that are involved in this process to keep the goal of the public interest in front of you and not to get bogged down in other less important issues.

Sincerely,

David C. Atkins

David C. Atkins

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JAN 31 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Bioeconomics Associates
3699 Larch Camp Road
Missoula, MT 59803

January 29, 1990

Vic Anderson
Montana DHES
Hazardous Waste Bureau
Cogswell Building, Room B201
Helena, MT 59620

Dear Vic:

This is a comment intended for the public record on the selection of a remedy for the Warm Springs Pond Operable Unit. I have read that comments are accepted until the end of this month.

My understanding is that the RI/FS process identifies alternative remedies that meet given legal environmental standards (ARARs). The criteria is cost-effectiveness; that is the cheapest alternative which satisfies the standards should be selected. It appears that the alternatives identified by the state (and by ARCO) appear to differ significantly in scale. For example, the state's alternative #3 is designed to control one-half the probable maximum flood (and costs $62.5 million) while alternative #2 would control the full probable maximum flood (and cost $258 million). The alternatives also differ in a number of other important ways such as the removal of hazardous wastes from Mill-Willow bypass, removal of wastes from the floodplain, etc.

Given these significant differences in scale among feasible remedies, my basic comment is that it may be important to also look at the benefits to be gained by the technical alternatives. The benefits of the remedies are in terms of improved environmental conditions and associated human use of the associated environmental services such as health, recreation, fisheries and wildlife. Another way to look at these benefits are in terms of avoided damages to health, recreation, etc. For example, what is the benefit of protecting for a given fractional level (eg. one-half) of the probable maximum flood (PMF) as opposed to protecting for the full PMF? Do the benefits of going from a $62.5 million remedy to a $258 million remedy far outweigh the costs? or vice-versa?

A related observation is that the Superfund Process in fact provides for interaction of remedy selection and design with considerations of related damages. This is made explicit in Figure 1-1 (p.1-3) in the Draft Warm Springs Ponds Feasibility Study (Vol. I, DHES, October, 1989) where Natural Resource Damage Assessment (if necessary) has an information/data exchange with remedy selection and design. For example, obviously the residual damages to which a given potentially responsible party (PRP) is liable will depend on the extent of the remedy. If the remedy is

small in scale, residual damages will be correspondingly large (and vice versa). This perspective again suggests the need for evaluating the efficiency of the choice of scale in remedy selection. Additionally, DOI regulations for conducting NRDA have in the past provided for the valuation of damages by restoration costs, based on a restoration plan to achieve baseline environmental conditions. This interpretation may be subject to challenge, but could imply that the restoration plan may be considerably more demanding than satisfying ARARs. The impression I get from the public hearings is that in fact the public wants a complete and permanent solution to the problem; NRDA appears to be the vehicle for making this possible.

These considerations are not entirely speculative. As you are aware an amended NRDA complaint was filed under CERCLA against ARCO by the State of Montana in December, 1983. The stay on this case has recently been lifted. As you are also aware, the DOI regulations under which an NRDA may proceed have been in part ruled invalid by the District of Columbia Circuit Court of Appeals (on July 14, 1989). An aspect of this ruling is that the court appears to give primacy to a "restoration cost" measure of damages, but holds out the possibility of DOI establishing "some class of cases where other considerations - i.e. feasibility of restoration or grossly disproportionate [restoration] cost to use value - warrant a different standard." It is up to DOI to provide further guidance on this issue. In any case, it is clear from the Circuit Court ruling that restoration costs are an important component of damage assessment.

I would conclude that the two sides of CERCLA, remedy and damage assessment, need to proceed in concert. From the standpoint of the PRP (presuming of course that liability can be established, costs can be recovered, etc.), it appears that full restoration is required: what isn't achieved by the remedy will be achieved by the restoration plan (and paid for by the damage assessment). (Additionally, of course, the PRP is liable for residual damages and damages up to the time the remedy and/or restoration takes place.) It would appear to be in the PRP's and the state's interest to be efficient. We won't know what is efficient until we measure the benefits of the proposed alternatives.

Best regards,

John Duffield

John Duffield

Montana Department
of
Fish, Wildlife & Parks

1420 East Sixth Avenue
Helena, Montana 59620
January 31, 1990

RECEIVED
JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Mr. Vic Andersen
Department of Health
and Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, MT 59620

Dear Mr. Andersen:

Please take the following comments into consideration as we move forward with the clean-up of the Warm Springs Ponds Operable Unit. Needless to say, our agency has tremendous interest in this clean-up effort because of the obvious benefits to fish and wildlife. We greatly appreciate the effort that your Department has put into this.

1. It is our understanding that the federal CERCLA guidelines do not allow public agencies to disclose clean-up alternatives to the public before they have been screened and approved by EPA. We would hope that those operating guidelines can be changed so that public input can be sought and used at an earlier stage of planning.

2. Until upstream clean-up is completed, we agree that the Warm Spring Ponds are necessary to provide treatment of Silver Bow Creek and possibly Mill and Willow Creeks. Assuming clean-up will eventually eliminate the need for the ponds, provisions should be made to evaluate the permanence of the remediation and the need for additional remedial measures -- possibly including removal. The record of decision should not release ARCO from reclamation responsibilities until we can be certain that permanent clean-up objectives have been met.

3. Every effort should be made to eliminate all possible source of metals to the system. We believe that Montana's goal should be to prevent all exceedances of EPA Gold Book criteria in the Clark Fork River downstream of the ponds and in the Mill-Willow Bypass at all streamflows less than 100-year flood flows. Once the clean-up of Silver Bow Creek is completed, Gold Book criteria should be met at all streamflows.

4. We presume you are aware that tailings in the Mill-Willow Bypass are not the only source of fish kills in the Clark Fork River. During the July 1989 fish kill, localized increases in the numbers of dead fish were observed downstream of Perkins Lane Bridge and near Deer Lodge. Electrofishing surveys conducted during September 1989 in the 2.3 mile section downstream of Perkins Lane Bridge showed that the kill was nearly complete for all species in this reach. These localized kills clearly originated from streamside tailings.

5. Information indicates that discharge from Pond-2, particularly during the winter and spring of 1989, may have caused fish mortality. Unusually high concentrations of metals were observed by the Water Quality Bureau in the Pond-2 discharge (copper concentrations as high as 210 ug/1) during March, 1989. High metals concentration coincided with a reduction in fish population numbers immediately downstream of the ponds (in previous years, fish populations had increased in this reach). This data point out the importance of improving pond design and treatment efficiency, particularly during winter and spring.

6. The surface water quality objective described on page 5-5 is somewhat vague. We would like to see reference to EPA Gold Book criteria for specific elements of interest including copper, cadmium and zinc. The objective: "reduce the potential for future contamination or future exceedances of criteria" is also vague. We believe the objective should be: "to meet EPA Gold Book criteria for all streamflows up to the 100-year flood event in the Mill-Willow Bypass and in the Clark Fork River."

7. We know that consideration was given to removal by your agency but it is not entirely clear why a removal alternative was not described in the feasibility study. We believe the public should have an opportunity to review the pros and cons and costs of removal of contaminants to a local site -- perhaps the Opportunity Ponds.

8. We have noted that preventing release of sediments from the pond system is a primary objective of diking. It is important that the design standards chosen will prevent release of sediment from all of the ponds for events up to 0.5 PMF and the MCE. We are not familiar with the rationale for using different design standards for each of the ponds. We would like assurance that sediments will remain contained in all of the ponds up to 0.5 PMF and the MCE.

9. It is also not clear to us whether the design standards for the dikes and ponds will protect against flooding that will occur in Mill and Willow Creeks. It is important to design all structures and channels to withstand flooding from all possible sources. We support reinforcing the dikes to meet the above standards and removal of tailings from the Mill-

Willow Bypass as soon as possible regardless of the pace of the remaining clean-up.

10. The decision as to whether Mill and Willow Creeks should be routed around or through the Warm Springs Ponds should depend on whether the source of metals to the Creeks can be effectively removed. Mill and Willow Creeks presently provide spawning habitat for adult brown trout. If the quality of Mill and Willow Creeks can be restored by removal or treatment of streamside contaminants, we prefer to continue routing Mill and Willow Creek through the Mill-Willow channel. However, if contamination is untreatable, such as may be the case if the source of metals is groundwater from the Opportunity underdrain system, we prefer that these waters be routed through the pond system to reduce metals loading to the Clark Fork River.

11. We support a remedy that will ensure attainment of EPA Gold Book criteria in the Clark Fork for all flow events up to at least a 100-year flood. The 2,000 acre-ft surge pond proposed in alternative-3 will not prevent metals from entering the Clark Fork for all flows up to the 100-year flood. However, the 8,000 acre-ft upstream impoundment described in Alternative 2 appears to accomplish this objective. Local opposition to the proposed surge pond site may necessitate that the State evaluate alternative sites or other options to increase storage and moderate flood peaks. We believe storage is an essential element of remediation and preference should be given to storage options that can be managed to improve summer streamflows in the Clark Fork River below the pond system.

12. The collection system designed to route eastside runoff around the pond system should be designed to prevent, to the extent possible, sediment from entering the Clark Fork River. Opportunities to increase wetlands and enhance waterfowl habitat should be considered if these improvements are compatible with project objectives and can be accomplished at little or no additional cost.

13. We remain concerned that wind action may continue to resuspend bottom sediments in Ponds 2 and 3. Department personnel who work in the area indicate that Pond 3, because of its large size and exposure to wind, is the primary source of wind generated turbidity. We have, on several occasions seen the Pond-2 discharge turn turbid as a result of wind action. These turbidity events were accompanied by a rise in metal concentrations in the Clark Fork. It is important that remediation includes measures to break up wind sweep and reduce or eliminate disturbances to pond bottom sediments and metals flocculents.

14. It is important that the final remedy will prevent contaminated groundwater from causing surface water exceedances of EPA Gold Book criteria. This is a particularly important consideration near the Mill-Willow Bypass and down gradient of Pond-1.

15. Wherever possible, we support designing fish and wildlife habitat enhancement into the project. This may include improving the Mill-Willow Bypass for spawning and rearing, designing surge ponds for eventual wetland use, seeding dikes and baffles to provide waterfowl nesting areas or providing storage to enhance streamflows. These improvements may partially offset fish and wildlife habitat degradation that has occurred in the area as a result of metals contamination.

16. It is our understanding that metals contaminated water from the Opportunity Pond system continues to be routed into the Warm Springs Pond. Siphons crossing under the Mill-Willow Bypass from the Opportunity system should meet earthquake and flood protection standards to prevent release of contaminants into the Clark Fork.

17. We noticed that the feasibility study document does not include future monitoring plans. We assume that monitoring will be required under CERCLA and we are interested in reviewing the monitoring plan once it is developed. Monitoring is essential to determine the effectiveness of the remediation and the need for additional remedial measures.

18. Our personnel who work in the vicinity of the Warm Springs Ponds have expressed the concern that the portion of Pond-3 located south of the proposed finger dike is extremely shallow. Consequently the dike may not be effective at preventing short circuiting during winter. We hope that you will evaluate this concern.

Because of the obvious implications of the clean-up effort to fish and wildlife in the drainage, our Department would like to offer our help in working with the Solid and Hazardous Waste Bureau and the Environmental Protection Agency to negotiate the final clean-up remedy with ARCO. Our biologists have considerable knowledge of and experience working in the area of the ponds and the upper Clark Fork which may prove to be valuable in the negotiations. Let us know if we can be of help.

Sincerely,

Patrick J. Graham
Associate Director

drg

January 29 1990
1051 West Mercury
Butte, Montana 59701

RECEIVED
JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Montana Department of Health & Environmental Services
Hazardous Waste Bureau
Cogswell Building
Helena, Montana 59620

Dear Clark Fork Project Manager:

Thank you for extending the period in which to submit comments on this precedent setting project. I am a member of the George Grant Chapter of Trout Unlimited and have attended all of the local public meetings pertaining to the alternative clean-up proposals. As an individual I support the specific remediation measures and objectives expressed in our club's letter of December 28, 1989. To expand:

1. Since the Mill-Willow Bypass has been fingered as the metals source causing the fish kills it should receive immediate (even stopgap) treatment to prevent another incident in the summer of 1990.

2. The State's proposed temporary upstream storage facility would create yet another fugitive dust and future reclamation problem. If the engineering analysis demonstrates the feasibility of enlarging the dams on Ponds 2 and 3 to retain the 100 year event the ARCO proposal seems like a better solution for flood retention.

3. By any measure of probability, environmental risk or fiscal prudence the concepts of complete floodplain tailings removal, pond tailings solidification or MPF containment are ludicrous. Schafer and Associates' pilot program of tailings neutralization holds considerable promise for curing the tailings malady at a fraction of the cost of just moving it.

4. The Butte to Warm Springs portion of Silver Bow Creek is the source of tailings to the ponds. Remediation should begin immediately on this section to increase the effective life of the Warm Springs Ponds beyond the half century envisioned in the remediation proposals. The ponds DO settle metals extremely well, although not always completely to State Standards. We need to bulwark the ponds against floods and earthquakes, improve their efficiency and increase their longevity.

I frequently fish the Wildlife Ponds and Upper Clark Fork immediately below the ponds. I, personally, have experienced the thrill of catching caddis-slashing browns turn to disgust as similar fish tumble downcurrent during another chemical fish kill. For an angler the first priority of the Warm Springs Ponds

cleanup has to be prevention of future fish kills on the river. There is another fishery at the Warm Springs Ponds, though. One that hasn't received adequate attention in any of the remediation proposals. The Wildlife Management Ponds situated between Pond 3 and 2 currently provide the very best public fishing for large (4 lb. plus) trout in America. (Why the Montana Department of Fish, Wildlife and Parks chooses to manage this unique fishery resource for ducks is another story). The final remediation plan should provide for several more "Hog Hole" size (25 acres maximum) ponds of sufficient depth to overwinter fish. Like the existing ponds, these additional ponds would utilize the carbonate enriched waters of the Warm Springs Ponds to provide tremendous growth rates for fish and enhanced opportunities for anglers.

Sincerely,

Tim Sullivan

Tim Sullivan

L.A. Saul
419 Adams
Helena, MT 59601
1/30/90

Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620

RECEIVED
JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Ms. Stiles,

I'm writing to comment on the Warm Springs Pond Feasibility Study. To begin, thank you for extending the public comment period, the draft documents were quite lengthy and the holiday rush did not allow for much review time.

My comments center around the fact that neither the agency nor the ARCO clean up plan can be considered a permanent solution. Both plans leave all the wastes in the floodplain - which will require perpetual maintenance, continue to contribute to future fish kills, and continue to contribute toward groundwater pollution. The tailings should be at least removed from the 100 year flood plain. Only one option, Alternative 2, considered removing the most contaminated tailings from the floodplain; however the solution was to truck the wastes to Boise, ID over 500 miles, a very expensive solution. The agency needs to consider at least two more potentially cost effective options for disposing of the wastes and removing them from the flood plain:

1) new technologies which can extract metals from the wastes, and thereby detoxifying the source permanently, and
2) closer disposal sites out of the flood plain and separated from potential contamination to groundwater.

A second major area of concern I have with the Warm Springs Pond Feasibility plan is the application of Montanas Dam Safety Standards to this project. The Standards were incorrectly applied in two respects.

1) The State safety factor was determined based on probability of Loss of life due to inundation ~~&~~ by flood water of a dam failure. However, the Warm Springs Ponds contain 19 million cubic yards of hazardous waste. The standards don't consider the damage to the environment, public drinking water supplies, buildings, ~~etc~~ Loss of life, etc. due to the release of toxic waste. Neither has the agency evaluated the costs in terms of dollars ~~or~~ Loss of life from a dam failure anywhere in the plan from anything other than flood waters. ie. toxic contamination. This entire study should be reevaluated based on the above comments.

2) The administrative rules call for a single classification to be used for all reservoirs ~~composed~~ made up ~~of~~ a single system, such as the Warm Springs Ponds. Therefore, a single most conservative design criteria ~~classification~~ should be used (ie. 0.5 PMF at least).

A single design criteria for the ponds to withstand major flooding should be used. In the current plan, if Pond 3 fails at its design criteria of 0.5 PMF then the downstream Pond 2 built at 0.3 PMF and pond 1 built at 0.2 PMF are also likely to fail.

In closing, I ask that you act responsibally to permanently clean up the wastes in the Upper Clark fork River. Your proposed alternative is only a temporary band-aid to the problems of hazardous waste cleanup in the river.

Sincerely,

Lynda A. Saul

141

ARCO Coal Company
555 Seventeenth Street
Denver, Colorado 80202
Telephone 303 293 4000

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JAN 31 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 30, 1990

VIA FEDERAL EXPRESS

Ms. Janie Stiles
Montana Department of Health and Environmental Sciences
Cogswell Building - Room B-201
Helena, Montana 59620

RE: ARCO COAL COMPANY's COMMENTS ON THE FEASIBILITY STUDY FOR THE WARM SPRINGS PONDS OPERABLE UNIT

Dear Ms. Stiles:

ARCO Coal Company ("ARCO") hereby submits, in triplicate, its comments on the Silver Bow Creek Investigation, Feasibility Study for the Warm Springs Ponds Operable Unit (October 1989), prepared by the Montana Department of Health and Environmental Sciences (the "FS"). ARCO's comments consist of the following documents:

1. Review Comments on the Silver Bow Creek Investigation Feasibility Study for the Warm Springs Ponds Operable Unit;

2. ARCO Plan Alternative 3A, Feasibility Level Design for Remediation of the Warm Springs Ponds Operable Unit; and,

3. ARCO's Responses to Public Comments.

ARCO respectfully requests that the State carefully consider and provide a written response to ARCO's comments. Please include ARCO's comments in the Administrative Record for the Warm Springs Ponds Operable Unit. If you have any questions concerning these comments, please do not hesitate to call me.

Sincerely,

Robert L. Dent
Minerals Projects Manager
(303) 293-7938

RLD/das

Enclosures

xc: J. F. Wardell/EPA (w/enclosures)
J. H. Desautels (w/enclosures)

142
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DEPARTMENT OF HEALT
ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BURE

Montana Audubon Council

OFFICE: P. O. Box 595 • Helena, MT 59624
PROGRAM DIRECTOR: Janet Ellis

January 31, 1990

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Great Falls

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Bozeman

Upper Missouri Breaks
Great Falls

Yellowstone Valley
Billings

Kathleen DeMarinis
Montana Dept. of Health & Environmental Sciences
Helena, MT 59620

Dear Ms. DeMarinis,

These comments are submitted on behalf of the Montana Audubon Council on the proposed plan for cleanup of hazardous wastes at Warm Springs Ponds near Opportunity, Montana.

The Montana Audubon Council is the unified voice of the nine National Audubon Society chapters in Montana. Because of the "grassroots" nature of our organization, you may receive comments from other segments of the organization, as well as from individuals. Any differences reflected in various comments from our membership should not be interpreted as conflicts within the Society, but as varying opinions resulting from the kinds of experience and knowledge possessed.

The most telling aspect of the Warm Springs Ponds Proposed Plan is the reason this area was identified as a high priority operable unit: "The Warm Springs Ponds....are susceptible to flood and earthquake damage, which potentially could release millions of cubic yards of tailings, sediments containing tailings, and metal precipitates into the Clark Fork River causing considerable environmental damage downstream of the ponds." (p.3) This statement sets up the goals and the critical nature of this

project. With this in mind, the Montana Audubon Council would like to submit the following brief comments:

1) It makes no sense to us why the Preferred Alternative "requires protection of the ponds to fractions of the PMF instead of the full PMF." Although more costly, the full PMF should be the guiding principle. Montana requires high hazard dams in this state to comply with the full PMF criteria - a hazardous waste site should meet the same criteria. Using less of a standard does not make sense, especially if this is to be a long term solution to the problem.

2) Is the Preferred Alternative supposed to be a long term solution? It would seem more appropriate to build into this program a) an immediate cleanup of the site because of its nature, yet b) the ability to revisit the "Warm Springs Ponds cleanup" because of the hazardous waste sites upstream: as the hazardous waste areas upstream are treated, Warm Springs Ponds can be reexamined.

3) Any measures designed to control problems from flooding from upstream areas, should capture and effectively treat all flows up to the 100-year flood.

4) As a long term solution to this problem, MAC feels that all hazardous waste in this area should be removed from the floodplain.

5) The Preferred Alternative will take and estimated five years to complete. MAC encourages the DHES to require cleanup to begin immediately, with a priority given to cleaning up tailings in the Mill-Willow bypass, the areas responsible for fish kills.

I want to thank you for the opportunity to comment on this proposal. The Warm Springs Ponds cleanup is of considerable importance to our membership and the citizens of Montana.

Sincerely,

Janet H. Ellis

Janet H. Ellis
Program Director
(406) 443-3949

RECEIVED
FEB 01 1990
MONTANA DEPARTMENT OF HEALTH
ENVIRONMENTAL SCIENCES
HAZARDOUS WASTE BUREAU

Dear Ms Stiles,

I am writting in regards to the Silver Bow Creek Superfund site.

My family enjoys one of the most beautiful lakes in the world, Pend d'Oreille. I want my grandchildren to be able to enjoy it, swim in it & drink it's water if necessary. Water is these most essential element on our planet. Without it no one can survive. If the Warm spring Ponds are not cleaned up correctly & soon Lake Pend d'Oreille will be affected more than it has been already damaged. We have freinds who get there drinking water directly from

Amtrak

the lake, it would be nice to know people could still drink from the lake 25 yrs from now.

Included in a list of the necessary actions to clean up the ponds correctly.

Please help save one small part of this beautiful planet. Clean H_2O must come before money, expediency & power. It started life & could end life.

Thank you

Arlene Dreher
853 Mabelle
Moscow, Id.
83843

- The ponds should be fixed to withstand major earthquakes and floods. The Mill-Willow bypass tailings should be removed from the floodplain to prevent fish kills. The agencies should order ARCO to perform this work immediately in 1990.
- The proposed cleanup plans are not a permanent solution. But the work should be done to protect the river while upstream sources are cleaned up. The agencies should look seriously at removing all of the wastes from the floodplain, and aggressively pursue nearby disposal sites and new technologies to extract the metals from the wastes.
- The interim solution should include some combination of dike raising and upstream flood impoundments on tributaries and on Silver Bow Creek to capture and effectively treat all flows up to the 100-year flood.
- Water quality below the ponds should meet state standards at flows up to the 100-year flood.
- All three ponds should be built using the most conservative design criteria. An incremental risk assessment should be done to determine the appropriate level of protection if the wastes are to be left in the floodplain.

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FEB 01 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 30, 1990

Janie Stiles, Information Officer
Montana Dept. Health & Env. Sci.
Cogswell Building
Helena, MT 59620

RE: Comment on the EPA/MDHES preferred alternative for cleanup of the Warm Springs Ponds.

I am very concerned with the direction the state and EPA appear to be taking in the selection of cleanup plans for mining-waste contaminated sites in the upper Clark Fork River Basin.

I understand that due it its vast size, the contaminated Clark Fork Basin has been divided by MDHES/EPA into smaller "pieces" more amenable for study. However, I believe it is essential that the more realistic view of the basin system as a whole be considered during the cleanup selection process.

The Warms Springs Ponds proposed plan does not take this more comprehensive view. At best, I believe the EPA/MDHES preferred plan could be considered a temporary measure. Specifically, I believe the following points must be reevaluated:

1. The plan preferred by MDHES/EPA allows the contaminated sediments in and around the Warm Springs Ponds system to remain in the floodplain. These contaminated sediments are to be contained by raising dam levels and installing RCRA approved capping to protect against a fraction of the PMF. Unfortunately, these sediments are still subject to possible transport within the Clark Fork River system during future flood events greater that the various fraction protection levels (.2 -.5 PMF). Therefore, after spending 62.5 million dollars, the problem still exists, and the public and environment downstream of the pond system is still at risk from a catastrophic release at Warm Springs Ponds.

   Remedial actions as defined by CERCLA are those responses to releases that are consistent with permanent remedy (emphasis added) to prevent or minimize the release of hazardous substances...so they do not migrate to cause substantial danger to present or future public health or welfare or the environment.

A permanent remedy could be accomplished by removing contaminated sediments from the floodplain (including those in Mill-Willow Bypass) as was considered in Alternative 2. To make this endeavor more cost-effective, the state should investigate the establishment of a RCRA site in Montana near the Warm Springs Ponds/Butte/Silverbow area.

2. In the interim period, a temporary solution for Warm Springs Ponds should include raising dike levels and the creation of upstream impoundments to circumvent any releases from the system due to flood events up to the 100 year flood.

3. The Clark Fork River fishery should also be protected in the interim from any further releases of contaminated sediment from the Mill-Willow Bypass. This could be accomplished by the removal and temporary storage (subject to the availability of a RCRA site) of the sediments. Water quality below the pond system should meet state standards at flows up to the 100 year flood.

As a public health official, a land use planner and a resident of a community downstream of the Superfund activity in the upper Clark Fork River, I am concerned that all remedial action plans are selected and managed as a coordinated effort. Cleanup efforts at downstream sites should not be at risk from less conservative remedial actions at sites upstream.

We who live downstream are tightly bound to the Clark Fork River system. We live along its banks, fish its waters and much of the economic stability we are working to build is based on recreational activities in and around the river. We can not afford to have anything less than a permanent solution to these environmental problems upstream.

Thank you for the opportunity to comment on the proposed plan.

Sincerely,

Denise Moldroski Mott

Denise Moldroski Mott
Mineral Co. Health Dept.
P.O. Box 396
Superior, MT 59872

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Ms. Kathleen McLaughlin
2105.5 River Road
Missoula, MT 59801

Ms. Janie Stiles
Montana Dept. of Health & Environmental Sciences
Cogswell Building, Room B201
Helena, MT 59620

Wednesday, January 31, 1990

Dear Ms. Stiles,

I want to express my concerns regarding the Superfund cleanup at the Warm Springs Ponds. Primarily, work done now on the site must ensure improved water quality and a river basin that remains healthy for the long term.

The proposed cleanup plans are not an acceptable permanent solution. However, work should be done to protect the river while upstream sources are cleaned up. The agencies should perform an engineering evaluation of removing all of the wastes from the floodplain and aggressively pursue alternative disposal sites and new technologies that can mine the metals from the wastes.

The ponds should be fixed to withstand major earthquakes and floods. The Mill-Willow bypass tailings should be removed from the floodplain to prevent fish kills. If negotiations break down, the agencies should order ARCO to perform the work immediately this year. Continuing fish kills are not acceptable.

The interim solution should include some combination of dike raising and upstream flood impoundments to capture and effectively treat all flows up to the 100-year flood level. Water quality below the ponds should meet state standards at flows up to the 100-year flood level.

Before allowing creeks to bypass the ponds, the agencies should confirm pollution data on Mill and Willow Creeks and locate pollution sources that can be removed.

All three ponds should be built using the most conservative design criteria. An incremental risk assessment should be done to determine the appropriate level of protection.

Living downstream from the Warm Springs Ponds, my family is concerned about the viability of the watershed. Those of us living in the Clark Fork River Basin should not have to tolerate contaminated groundwater and 100 more years of ecological ravages. Let's at least begin to discuss requiring ARCO to post a bond for perpetual maintenance of the system.

Now is the time to clean up past abuses of the Clark Fork Basin and ensure a healthier river for generations to come. Thank you for your work to this end.

Sincerely,

Kathleen McLaughlin

Kathleen McLaughlin

MEIC
MONTANA ENVIRONMENTAL INFORMATION CENTER

January 31, 1990

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Janice Stiles
Montana Department of Health and Environmental Sciences
Cogswell Building, Room B 201
Helena, MT 59620

Dear Ms. Stiles:

MEIC opposes the preferred alternative selected by the state for the proposed cleanup of the Warm Springs Ponds. CERCLA requires a permanent cleanup which significantly reduces the volume, toxicity and mobility of the hazardous substances and which assures protection of human health and the environment. The preferred alternative does not do so.

It does not provide a permanent solution. All of the wastes remain in the 100-year floodplain. The ponds would not be stabilized for a probable maximum flood. Thus protection of the public health and the environment is not assured. In addition, the plan allows for contaminated flows from 10-year floods to be by-passed into the river without adequate treatment in the ponds. The potential for severe contamination of the Clark Fork River between Warm Springs and Missoula is still present. The plan also does not adequately address perpetual maintenance and eventual replacement of the pond system. How would they be replaced and who would pay for it? ARCO should be required to post a bond for assurance to the public that the solution will be permanent.

MEIC supports a cleanup plan that is permanent and that begins immediately. Such a plan would include the requirements that the ponds to be fixed to withstand major earthquakes and floods, and that the Mill-Willow bypass tailings be removed from the floodplain. This would be acknowledged as a temporary solution which ARCO should be required to perform immediately in 1990. This interim solution should include dike raising and upstream flood impoundments on Silver Bow Creek and other tributaries, and effective treatment of all contaminated flows up to the 100-year flood. As a final, permanent solution, all wastes should eventually be removed from the floodplain. A nearby disposal site should be developed and technology employed to extract valuable metals from the tailings.

It is MEIC's opinion that the proposed alternative does not comply with CERCLA. Given the citizen's right to file suit under CERCLA, to ensure a permanent solution which protects their health and the environment, the state must reconsider it's proposed cleanup. Thank you for the opportunity to comment.

Sincerely,

Chris Kaufmann, MEIC staff

P.O. Box 1184 Helena, MT 59624 (406) 443-2520

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MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
HAZARDOUS WASTE BUREAU

COMMENTS ON THE WARM SPRINGS CLEANUP PROPOSAL

First of all I would like to commend DHES, EPA and ARCO personnel for their cooperative attitudes and continuing efforts to resolve all the environmental and related public health problems in the upper Clark Fork River as governed by CERCLA, SARA and related statutes. Many have criticized the actions taken to date by DHES/EPA as inordinately slow. I understand the tremendously complex nature of these problems and the amount of time required to adequately assess the problem.

I am and have been actively involved in Superfund issues in the Clark Fork basin for some time. Currently, I am working in conjunction with Dr. Vicki Watson to establish what contribution, if any, fluvially deposited mine wastes and eroding streambank sediments make to the soluble reactive phosphorus pool in the Clark Fork. Many hours of field work in the Warm Springs Ponds area have given me first hand knowledge of some of the problems that must be addressed and exactly how urgent it is to take immediate action to stabilize these ponds before a catastrophic event takes place.

Problems with the **preferred** alternative:

1) Ponds would be upgraded to withstand an MCE but **only a fraction of the probable maximum flood.** DNRC dam safety requirements are applicable for the imminent threat posed by the failure and release of water impounded by those structures. They **are not** designed to protect public health and the environment from threats posed by the catastrophic release of tons of metal contaminated sediments. **More stringent safety criteria should be adopted relative to the potential health and environmental threats posed by the failure of the ponds.** In addition, there is inadequate weight given to the increased health risks and future cleanup costs associated with dam failure in proportion to the costs associated with upgrading the ponds to withstand larger flood events.

2) Contaminated sediments and exposed tailings in the Mill-Willow Bypass, above Pond 3 and below Pond 1 exceeding established action levels for lead and arsenic would be excavated and disposed of in Pond 1. Although a RCRA compliant cap is expected to contain these contaminants, **they are still in the flood plain**. Furthermore, this technique **assumes** the clay caps integrity is maintained and the total recovery of contaminated groundwater with interception trenches. Are interception trenches a **proven effective**

method for recovering contaminated groundwater in alluvial/fill material? There is inadequate discussion about maintenance requirements/costs for such a system and assurances of such maintenance. Will ARCO have to post a bond? What happens after the 70 year life expectancy of the alternative is reached, is ARCO absolved of further responsibility?

3) The proposed upstream flood flow storage and treatment system would not be able to capture and subsequently treat all flood flows on Silver Bow Cr. During events exceeding the upstream impoundment capacity, some water would be discharged to the Mill-Willow Bypass without being treated for dissolved metals. **All flows must be treated for dissolved metals to prevent the need for future cleanup activities.** Montana's water quality standards must be met at **all** times!

4) It is imperative that stabilization of the ponds be achieved in as expeditious a manner as possible! **The proposed alternative is an interim solution not a permanent solution!** Enough flexibility must be built into the final **interim** cleanup alternative to provide for future cleanup needs. DHES/EPA **must** reach an indisputable agreement with ARCO that future cleanup of the site will be provided into perpetuity if necessary.

Thank you very much for considering these concerns.

Sincerely,
Scott Luchessa

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

KATHLEEN DEMARINIS
MDHES

DEAR MS.DEMARINIS:

I WOULD OFFICIALLY LIKE TO GO ON RECORD AS OPPOSING THE STATE\EPA PROPOSAL FOR THE WARM SPRINGS SETTLING PONDS. I HAVE ATTENDED PUBLIC MEETINGS ON BOTH THE ARCO PLAN AND THE STATE\EPA PLAN AND ALTHOUGH THERE ARE SOME SIMILARITIES, THERE ARE SOME DISTINCT DISADVANTAGES TO THE STATE\EPA PLAN.

1. THE DEVELOPMENT OF A NEW SETTLING POND TO THE SOUTH OF OPPORTUNITY WOULD IN MY OPINION CREATE AN ADDITIONAL ENVIRONMENTALLY DANGEROUS SITE WITH NO REGARD FOR THE PEOPLE LIVING IN THE DEER LODGE VALLEY , THE AIR QUALITY, OR THE WATER QUALITY.

2. THE STATE\EPA PLAN DOES NOT ADEQUATELY INCLUDE INFORMATION STRESSING THE SHORT\LONG TERM EFFECTS OF YOUR PLAN ON WATERFOWL AND WILDLIFE IN THE ECOSYSTEM.

3. THE STATE\EPA PLAN DOES NOT ADEQUATELY ACKNOWLEDGE THE FACT THAT AFTER THE PLAN IS INITIATED THERE WOULD BE A LONG RANGE EXTREMELY EXPENSIVE SYSTEM OF ONGOING CLEANUP OF THE FOURTH POND\DUSTBOWL SITE.

AT THIS POINT IN TIME I FEEL THE ARCO PLAN IS FAR SUPERIOR TO THE STATE\EPA PLAN.

SINCERELY YOURS,

Dick Solum

DICK SOLUM
1146 WEST DIAMOND
BUTTE, MONT. 59701

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AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Clark Fork Coalition
P.O. Box 7593 • Missoula MT 59807 • (406) 542-0539
P.O. Box 1096 • Sandpoint ID 83864 • (208) 263-0347

January 27, 1990

Jane Stiles
Dept. of Health & Environmental Sciences
Cogswell Building
Helena, Montana 59620

Re: Warm Springs Ponds clean-up plan

Dear Ms. Stiles:

Recent U.S. Geological Survey monitoring data on Lake Pend Oreille confirms that Idaho's largest lake receives 90% of its water from the Clark Fork River. That's 90%. Researchers say that even a small amount of pollutants at that volume can cause real trouble for this beautiful lake.

Because of this, I view decisions made in Montana regarding the Clark Fork as critically important to the future of Lake Pend Oreille. As Pend Oreille Director for the Clark Fork Coalition, I am concerned that the proposed clean-up plan for the Warm Springs Ponds Superfund site is not adequate for permanent protection of the river or the lake. I would like to make the following comments:

-There is no question that the ponds should be fixed to withstand major earthquakes and floods. ARCO should be required to stabilize the ponds to prevent possible catastrophic contamination of the river and lake.

-ARCO should be required to remove all tailings along the Mill-Willow by-pass, beginning in 1990.

-The agencies should seriously consider eventually removing all wastes from the floodplain by establishing permanent near-by disposal sites.

-Until permanent clean-up can be attained, interim solutions should include both raising the dikes in the ponds and building new flood control impoundments on upstream tributaries.

-If wastes are to be left in the floodplain, the agencies should perform a thorough assessment of the risks and consequencies of the probable flood scenarios for downstream communities. An appropriate level of protectiion must be determined--and acted upon.

The majority of my time in the Coalition's Sandpoint office is

spent on nutrient-related issues. However, the nutrient impacts on this lake pale in comparison to the possible impacts from a catastrophic release of contaminants from any one of a number of Superfund sites in the upper Clark Fork drainage. Those of us around the lake look to you for protection from such a catastrophic event. We urge you to reconsider your proposed plan and opt for more effective and permanent clean-up of the Warm Springs Ponds.

Sincerely,

Ruth Watkins

Ruth Watkins
Pend Oreille Director

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 29, 1990

To: Vic Anderson

From: Gary Baxter (P.O. Box 8832 Missoula, MT 59807)

RE: Warm Springs Feasibility Study

I favor Alternative 1 as the only one that could be considered as a permanent solution to the toxic metal problem in the Warm Springs Pond System. If Alternative 2 is endorsed in the Record of Decision it should be made clear to the responsible parties that eventually a permanent solution should be implemented.

In this whole decision process, unlike many other people, I felt that your agency and the EPA did a <u>good job</u> in keeping the public informed and involved. I would have like to seen your agency and the EPA allowed the Montana Department of Fish, Wildlife & Parks to take a more direct role in developing the final solution.

Thanks for your time and concern.

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Clark Fork Coalition

P.O. Box 7593 • Missoula MT 59807 • (406) 542-0539
P.O. Box 1096 • Sandpoint ID 83864 • (208) 263-0347

January 31, 1990

Vic Anderson
Department of Health and Environmental Sciences
Cogswell Building
Helena MT 59620

John Wardell
U.S. Environmental Protection Agency
Region 8 Montana Office
301 S. Park
Helena MT 59626

RE: Warm Springs Ponds Feasibility Study

Dear Mr. Anderson and Mr. Wardell,

Enclosed please find a copy of the Clark Fork Coalition's comments, providing our analysis of the draft feasibility study for the Warm Springs Ponds. After you and your staffs have reviewed public comments on the state's proposed plan we would appreciate an opportunity to meet with you to discuss our comments and suggestions.

The Coalition's comments can be briefly summarized as follows:

- **Continued bypassing of contaminated water and sediments around the Warm Springs Ponds and less than optimal treatment within the ponds is not acceptable.** The proposed plan will not prevent continued releases of untreated, contaminated Silver Bow Creek flows into the Clark Fork River during moderate flood events, and it will not provide optimum treatment or meet water quality criteria during 2-3 year floods. The proposed 2,000 acre-foot impoundment would store flows expected in a 2-3 year flood, while the 8,000 acre-foot impoundment of Alternative 2 would store only a ten-year flood for treatment in the ponds. The proposed plan is not acceptable because it will not capture and effectively treat all flows up to the 100-year flood, or meet state water quality standards at those flows.

- **The agencies should develop an alternative which includes flood control structures in the Silver Bow Creek Basin above the Warm Springs Ponds.** The agencies have proposed an alternative which partially recognizes the need to control floods in Silver Bow Creek before they reach the ponds. But the proposed plan falls far short of managing floods and providing effective treatment in the ponds. A new proposal should be developed to manage flows up to the 100-year flood in the Silver Bow Creek Basin, including plans for

construction of storage impoundments on tributaries or on Silver Bow Creek. Dam sites could include those studied in the recent Flood Modeling Study, which were unfortunately not included in the Feasibility Study.

- **The upgrading of the pond treatment system, berm stabilization and removal of tailings from Mill-Willow bypass should be segregated from development of flood control alternatives. Work should begin on the upgrading, stabilization and removal activities this construction season.** There is no apparent disagreement over whether the tailings in the Mill-Willow bypass should be removed. However, both the state and ARCO have proposed disposing of them in the existing ponds. Instead, the wastes should be removed from the 100-year floodplain and disposed in an approved waste repository. There is also little disagreement that the ponds should be protected against floods and earthquakes. The agencies and ARCO disagree on the level of flooding that the ponds should be protected against. Until this disagreement is resolved the Mill-Willow bypass tailings can not be removed, the ponds can not be stabilized, and the Clark Fork River will continue to be exposed to a high risk of fish kills and catastrophic releases during floods or earthquakes. These continued risks are unnacceptable. The agencies should reach agreement with ARCO, with full public involvement, on what constitutes the probable maximum flood. An order should then be negotiated, with full public involvement, to commence work on the Mill-Willow tailings removal, berm stabilization and upgrading of the pond treatment system during the 1990 construction season. If negotiations with ARCO fail to produce agreement, the agencies should issue a unilateral order, with public involvement, to perform the stabilization and removal activities to the most conservative and protective design criteria.

- **The source of contaminants in Mill and Willow Creeks should be identified and eliminated as part of the Warm Springs Ponds response. Until then, Mill and Willow Creeks should be routed into pond 3 for treatment.**

- **The level of protection afforded the Warm Springs Ponds should be based on an incremental hazard-risk assessment or based on the total volume of contaminated sediments and water stored in the ponds.** The proposed plan proposes flood protection levels based on state dam safety regulation for high hazard dams. But the protection levels were calculated based only on the volume of water stored in the ponds. The sediments stored in the ponds are not considered in this calculation despite the fact that these wastes pose significant threats to public health and the environment. The agencies should have performed an incremental hazard-risk assessment to determine the appropriate level of flood protection for this project. The ponds should be stabilized to a minimum of 0.75 PMF, which can be calculated from the dam safety regulations based on the total volume of water and sediments stored in the ponds. This standard should be applied equally to all three ponds which are integral parts of the same system.

- **The agencies should have included alternatives evaluating treatment technologies for hazardous wastes at the Warm Springs Ponds.** The wastes in the ponds present a significant threat to public health and the environment. But the agencies have narrowed the focus of their investigation by viewing these wastes only as a problem, and not as a potential resource. The agencies should have developed alternatives employing proven or innovative technologies to extract and recycle minerals from wastes in the ponds.

- **Heavily contaminated tailings at the Warm Springs Ponds should be removed**

from the floodplain following permanent cleanup of upstream sites. A local waste repository system should be established to handle wastes from floodplain sites along Silver Bow Creek and at the Warm Springs Ponds. Repositories are also needed to allow evaluation of a complete range of remediation alternatives for all of the Clark Fork sites. All tailings and contaminated soils which exceed action levels based on both human health and environmental considerations should be removed from the floodplain as a final remedy for the Warm Springs Ponds, following decisions on permanent cleanup of all sites upgradient of the ponds.

- **The proposed plan is not a permanent solution.** The proposed plan would not permanently or even temporarily reduce the volume or toxicity of wastes in the ponds, or permanently reduce the mobility of the wastes, as required by Section 121 of the Superfund Amendments of 1986. The agencies' estimated life ofor the ponds seems to be greatly over-estimated. Following immediate steps to protect the ponds against floods and earthquakes and to remove bypass tailings, and following decisions on permanent remediation for all upgradient sites, the agencies should present to the public alternatives for permanent solutions including removal of wastes from the floodplain, storage and treatment of wastes, proven or innovative technologies to extract and recycle minerals, site closure and cleanup of contaminated groundwater.

- **Activities at the Warm Spring Ponds site should be better coordinated and sequenced with remedial responses at other sites in the basin.** Decisions can not be made now on a permanent remedy for Warm Springs Ponds without knowledge of the degree of cleanup that will be achieved at upstream sites. The agencies should recognize the need for a phased response at the Warm Springs Ponds, whereby the ponds function as a treatment system for Silver Bow Creek until upgradient sources are cleaned up, when a final remedy can be chosen for the Warm Springs Ponds.

- **The public participation, public disclosure and environmental analysis used in the Warm Springs Ponds feasibility study was faulty.** Because the Warm Springs Ponds cleanup is a major federal action significantly affecting the human environment, a National Environmental Policy Act environmental impact statement or a functional equivalent of it and its public participation process should have been required. The public participation process used at the Warm Springs Ponds did not provide a functional equivalent of a NEPA process. Most significantly, the Feasibility Study failed to present a sufficiently broad range of alternatives, and the public was excluded from scoping of alternatives in the early stages of the study process. The state should correct deficiencies in this process before moving on to other Superfund sites in the Clark Fork basin. The state should segregate activities from the proposed plan involving upgrading the ponds treatment system, removing the Mill-Willow bypass tailings and protecting the pond berms against flood and earthquakes, and negotiate or issue a unilateral order to ARCO to perform this work beginning in 1990. And the state should evaluate other alternatives suggested by the Coalition and others, including upstream impoundments for flood control. This may require an amended feasibility study to provide a functional equivalent of NEPA.

In summary, the Clark Fork Coalition's conceptual plan for the Warm Springs Ponds is as follows:

1. Removal of Mill-Willow bypass tailings, stabilization of ponds against floods and

earthquakes and upgrading of the treatment system would be segregated from the remainder of the proposed plan, and implemented as an interim remedy for the Warm Springs Ponds. Alternatives for flood and flow control in the Silver Bow Creek Basin should be developed and presented for public review, including plans for construction of storage impoundments on tributaries or on Silver Bow Creek.

2. Alternatives for permanent solutions, including removal of tailings from the floodplain, storage and treatment of removed tailings, technologies to extract and recycle minerals, and treatment of contaminated groundwater, would be developed and presented for public review. This would be done following completion of actions included in item 1, and following decisions on the degree of cleanup for all upgradient sites.

3. Contaminant sources along Mill and Willow Creeks would be identified and removed as part of the Warm Springs Ponds response, with full public review and participation. Until then both creeks would be routed into pond three for treatment.

4. The ponds would be protected against the maximum credible earthquake and three-quarters of the probable maximum flood, based on state dam safety regulations and calculations of total water and sediment volume in the ponds. However, if heavily contaminated wastes are to be left in the floodplain, the ponds would be protected against all foreseeable floods, or alternatively the level of flood protection would be based on a thorough incremental hazard-risk assessment, conducted with full public review and participation.

5. A nearby waste repository would be established, with full public review and participation, to handle wastes removed in 1990 and 1991 from the Mill-Willow bypass, and eventually to handle other wastes removed from the ponds and other floodplain sites.

6. Decisions for permanent solutions for all upgradient sites would be reached before selecting a final remedy for the Warm Springs Ponds.

7. Future public involvement, public disclosure and environmental analysis at this and all other Clark Fork Basin sites should provide a functional equivalent of the National Environmental Policy Act environmental impact statement process. The Coalition offers its assistance to the state in improving its public involvement process, using the model of public participation demonstrated during the past year at the Milltown Superfund site.

Please contact me if the Coalition can be of further assistance to the Montana Department of Health and Environmental Sciences or the U.S. Environmental Protection Agency on this important matter.

Sincerely,

Pete Nielsen

Peter Nielsen
Executive Director

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Comments on the Warm Springs Ponds
Feasibility Study and Proposed Plan
Submitted by
The Clark Fork Coalition
January 30, 1990

Continued bypassing of the Warm Springs Ponds and less than optimal treatment within the Ponds is not acceptable.

The proposed plan (MDHES and EPA, 1989) for cleanup of the Warm Springs Creek operable unit will not prevent continued releases of untreated Silver Bow Creek water containing toxic metal wastes into the Clark Fork River. The proposed plan will not provide for optimum treatment conditions in the Ponds for floods flows greater than those with about 2-3 year recurrence intervals, and the FS (MDHES et. al., 1989) has not convincingly demonstrated that water quality criteria will be met during 2-3 year recurrence interval floods. The chronic water quality criteria for metals will be exceeded in releases for the Warm Springs Ponds under the proposed plan. The FS does not provide an assessment or analysis of the public health or environmental effects of these continued releases. Indeed, such assessments or analyses are probably not possible, since necessary measurements of metals concentrations in streamside sediment samples were not made. The projected lifetime of the Pond system under alternative 3 is highly optimistic.

Water quality criteria must be achieved in the river below the Warm Springs Ponds not only during base-flow,summer conditions when biological activity in the Ponds is high, but also during wintertime and times of runoff and floods. It is clear from the treatability studies in the Phase II RI (CH2M Hill, et.al., 1989) that optimum conditions for achieving water quality criteria for copper in the Ponds effluent during about three-quarters of the year include retention times of at least 15-20 days at inflow pH values of about 11.0. It appears that both alternative 3 (MDHES and EPA, 1989) with about 20-25 days detention time and the ARCO alternative 3A (ESA, 1989) with about 28 days detention time would provide sufficient reaction time at base flows (about 100 cfs or less). The Phase II RI Treatability Study results also suggest that final pH values from holding times greater than about 20 days would be below about 9.0. However, as the FS recognizes, final pH adjustment of treatment pond

effluent may be required. Even so, it appears at the feasibility level that either alternative 3 or 3a could provide detention and basicity conditions in the optimum range to meet water quality criteria for copper at base flow conditions of about 100 cfs.

At flows higher than base, metals loading in the inflow will undoubtedly be increased, and detention times in the Ponds will decrease. The Phase II RI "Runoff" treatability studies suggest that detention times of 20 days at pH 11.0 will not be sufficient to reduce effluent copper concentrations below the chronic water quality criteria under high sediment concentrations in Silver Bow Creek inflow.

At flows much greater than about 100 cfs, the detention time in Pond 3 in alternative 3 is reduced. At 600 cfs, (the proposed design maximum inflow) the detention time would be reduced to about 3-4 days, which the "winter" treatability studies indicate is below the optimum holding time even at initial pH 11.0 to realize an effluent copper concentration below 12 micrograms/liter, the chronic water quality criteria. The FS states that flows in excess of 600 cfs represent about a two year recurrence interval event. If the volume of inflow associated with these peaks is sufficient to reduce Pond 3 detention times significantly below 20 days, then chronic water quality criteria for copper in the effluent may be expected to be exceeded at commonly occurring high water events on Silver Bow Creek.

The FS has identified chemical specific water quality ARAR's for the Warm Springs Ponds operable unit for both ambient water quality and point source discharges. These ARAR's are based on the Montana Clean Water Act and its regulations. One of these ARAR's, (ARM 16.20.622(h)(i)), requires that surface waters flowing from the Warm Springs Ponds may not cause excedances of the Gold Book acute and chronic aquatic life criteria for metals in the Clark Fork River. Another ARAR, based on ARM 16.20.622(h)(ii), specifies that any point source discharge from the operable unit must also comply with the Gold Book acute and chronic water quality when stream flows equal or exceed the 7-day average low flow which would be expected to occur once every 10 years. The chronic water quality criteria for copper applicable to these chemical specific ARAR's is 12 micrograms/liter at a hardness of 100 milligrams/liter.

Alternative 3 proposes to manage flows in excess of 600 cfs by routing them into a 2000 ac-ft, settling-storage basin situated upstream from the Ponds. Flows in excess of 600 cfs in Silver Bow Creek would be routed into the basin for settling and or storage, depending on the magnitude of the event hydrograph. Flows less than 600 cfs would be passed down Silver Bow Creek into Pond 3 concurrent with diversion of higher flows to the settling basin. Up to 2000 acre feet of water entering the settling basin would be stored for later discharge at reduced flows for treatment in Pond 3. Volumes in excess of 2000 ac-ft would be discharged from the basin and passed down Silver Bow Creek. If the combined flow in Silver Bow Creek and the discharge from the basin exceeded 600 cfs, the excess would be passed down Mill-Willow bypass untreated into the Clark Fork River. The efficiency of settling of sediment in the basin would depend on detention

time and the particle size distribution of suspended sediments. The efficiency of removal of solid phase metals in the settling basin will depend on detention times and the concentration of metals in the sediment size distribution fractions.

The FS states that the proposed upstream settling basin could store the anticipated volume of a 1000 cfs peak flood lasting 24 hours (which equates to 2000 ac-ft). This flow rate would be associated with about a 2-3 year return period. It appears possible that the proposed alternative 3 may be able to accommodate a peak flow of such duration and meter the stored water into Pond 3 at optimum flow rates. The efficiency of treatment of the entire flood depends on the duration and volume of flows 600 cfs and less. Floods flows greater than the 2-3 year recurrence interval event will not be completely treated.

The 10 year calculated flood on Silver Bow Creek at the Ponds diversion has a peak of about 2200 cfs and a five day volume of about 9000 ac-ft (CH2M Hill, 1989a). Between 12-16 hours into such a flood, the flow in Silver Bow Creek would exceed 600 cfs and continue above this level for about 70 hours, according to the hydrograph. During these 70 hours, flows above 600 cfs would be diverted into the upstream settling basin. Approximately 44-48 hours into the 10 year flood, it would be necessary to begin spilling water from the upstream settling basin into Silver Bow Creek, since the volume of water diverted into the basin will begin to exceed the capacity of the basin at about this time. Once spilling begins, the flow in Silver Bow Creek will exceed 600 cfs, and flows above this level would be diverted into Mill-Willow bypass and the Clark Fork River without treatment. A preliminary water volume balance for the calculated 10 year flood suggests that of the approximately 9000 ac-ft volume discharged, about 3500 ac-ft would be passed through Pond 3 at less than optimum treatment conditions; about 2300-2400 ac-ft would be passed down Mill-Willow bypass into the Clark Fork untreated; 2000 ac-ft would be retained in the settling basin, presumably to be metered into Pond 3 under optimum treatment conditions upon subsidence of flows in Silver Bow Creek; and the remainder, about 1000 ac-ft represents flow during the event less than about 600 cfs.

Since the proposed alternative 3 will not provide optimum treatment conditions for a ten year return period flood on Silver Bow Creek, it inevitably follows that treatment efficiency will be reduced for larger floods, because detention times will be further reduced and larger volumes of untreated water would be diverted into Mill-Willow Bypass. This reality precludes compliance with chronic water quality criteria during these events. Although the mass of and concentration of suspended sediments would be reduced during high flows, the FS does not provide estimates of the concentrations of metals to be expected in the untreated, bypassed flows. Metals concentrations in grain size distributions of upstream sediment deposits are not available (Bunte, 1989).

The FS states that the expected lifetime of the upgraded pond 3 will approach 80 years, after which time the flow into Pond 3 will need to be reduced because the minimum depth in the Pond for effective treatment would

be reached. The minimum depth would be reached in about 80 years because, as the FS estimates, annual hydroxide and other sludge production would fill up the Pond to the minimum depth. The FS estimates that the annual volume of sludge produced would be about 49,000 cubic yards. The estimated lifetime of 80 years for the Ponds may be significantly overestimated.

The annual sludge volume of 49,000 cubic yards was derived from Phase II RI laboratory experiments, which showed that about 0.66 ml of sludge was produced per liter of water treated. This volume of 0.66 ml/l of sludge produced appears to have been based on the "winter" sample experiments, but the FS does not state whether the experiments were barrel- or lab-scale tests. Lab-scale experiments conducted at pH 11.0 produced about 2.5 to 3.0 ml sludge/l. Should this rate of sludge production be realized, the lifetime of Pond 3 would be ([.66/2.7][80]) or about 20 years. Barrel-scale, "winter" experiments produced about 9.5 ml sludge/l at pH 11.0. If this rate of sludge production is realized, the lifetime of Pond 3 would be ([.66/9.5][80]) or about 6 years. The treatability studies indicate that base flows will likely need an initial pH of 11.0 to meet water quality criteria for copper. The estimated lifetime of Pond 3 of 80 years is clearly an upper bound. The lifetime based on sludge production alone appears to lie somewhere between 6 and 80 years.

The amount of sediment carried into the Ponds by Silver Bow Creek and deposited in Pond 3 will also have a significant influence on the useful life of the Ponds under alternative 3. According to the FS, about 11,000,000 cubic yards of sediment are estimated to be in Pond 3 at present. Since Pond 3 was constructed in 1959, the calculated annual average deposition of sediments in Pond 3 is about 360,000 cubic yards/year. According to the FS, the capacity of the present inlet structure to the Ponds is 700 cfs, and that this structure is prone to plugging by trash, thereby reducing its ability to pass water at that rate. This situation has resulted in all of the flow from Silver Bow Creek being diverted into Mill-Willow Bypass. Alternative 3 proposes an upgrade of the inlet structure to increase its efficiency, and to reduce the likelihood of its plugging. This increase in efficiency suggests that at least as much water will enter the inlet structure after alternative 3 is constructed as does presently. If the annual sediment load carried into Pond 3 remains the same after alternative 3 is constructed, the useful life of the Ponds would be about 10 years, based on sedimentation alone. The input of sediments into the Pond system may have been reduced since the 1970's because of reduction in upstream source input. Reductions in sediment source strength will proportionally increase Pond lifetime. If the upstream sediment source strength has been reduced by one-half, the lifetime of the Ponds under alternative 3 would be about 20 years.

The estimate of the useful life of Pond 3 is a significant requirement in remedial response for the Warm Springs Ponds, and for upstream operable units. The useful lifetime of Pond 3 essentially determines the available time to effect a permanent cleanup of all upstream sources. If it is not possible to achieve this cleanup during the useful life of the Ponds, then provision needs to be made in the proposed plan for the construction of

additional treatment facilities as the efficacy of the Ponds is eroded. Similarly, the useful life of the Ponds is important to downstream remedial planning and action. It seems inappropriate to implement a permanent solution to downstream operable units if upstream contaminant sources cannot be completely controlled.

The agencies should develop an alternative which includes flood control structures in Silver Bow Creek Basin above the Warm Springs Ponds.

The results of the Phase II RI treatability studies for lab-scale, "winter" samples show that as pH increases from 9.0 to 11.0, removal efficiencies for copper increase. These results also show that as time increases to 20 days at pH 11.0, copper concentration are reduced to approximately the chronic water quality criteria. The chronic water quality criteria for copper was not achieved at pH values from 8.0-10.0, even after 20 days (Table 3-2, Phase II RI, App A). The barrel-scale, "winter" sample experiments yielded comparable results: at initial pH of 9.0, the chronic water quality criteria for copper was not achieved after 21 days, but the criteria was achieved at initial pH 11.0 after 21 days of reaction time (Table 3-8, Phase II RI).

The Phase II RI treatability studies also included a suite of experiments designed to measure the hydroxide precipitation of metals in samples containing very high concentrations of metals and suspended sediment, presumably simulating flooding. These experiments are referred to as the "runoff" samples. The experiments were also conducted at lab- and barrel-scales. The results of the lab-scale, "runoff" experiments show quite clearly that although there was a significant reduction in metals concentrations at initial pH values from 8.0 to 11.0, the chronic water quality criteria for copper was not achieved in any experiment even after 20 days reaction time. (Table 3-7, Phase II RI, App A). Furthermore, the chronic water quality criteria for copper was not achieved in the barrel-scale, "runoff" experiments after 20 days at an initial pH of 11.0.

The results of the treatability experiments indicate that for base flows in Silver Bow Creek during periods of very low biological activity, a retention time of at least 15 to 20 days at initial pH 11.0 will be necessary to reduce copper concentrations to meet water quality criteria. The results of the experiments with samples simulating flood or runoff conditions indicate that chronic water quality criteria for copper will not be achieved even after 20 days retention time at initial pH of 11.0.

The treatability studies indicate that proposed alternative 3 will result in the meeting of the chronic water quality criteria for copper during wintertime base flows less than about 100 cfs at initial pH of 11.0. The estimated detention time (reaction time) for the proposed alternative is about 20-24 days.

Detention times are reduced obviously during higher flows. At the proposed design inlet flow of 600 cfs, the detention time in Pond 3 will be reduced to about 3-4 days. The treatability studies indicate that chronic water quality criteria for copper will not be achieved at this flow rate even if metals concentrations resemble those of winter time base flows.

Proposed alternative 3 is not designed to achieve chronic water quality criteria during flooding. The alternative does not have sufficient water storage capacity to manage even a 10 year flood, (which has a probability of being equaled or exceeded during the next ten years of 0.65) and will decrease in treatment efficacy at higher floods. The alternative depends on passing water to the Ponds during high sediment load conditions at flow rates which supporting experiments indicate cannot achieve the stated goals of meeting water quality criteria. The alternative further depends on the passing of untreated water directly into the Clark Fork River on the assumption that suspended sediment loads in the bypassed flow will be reduced, but cannot estimate the resultant reduction in metals concentrations in the bypassed flow because required measurements were never made.

Neither the FS nor the State's most recent Flood Modeling Study (CH2M Hill, 1989b)provide sufficient data to assess the efficacy of the treatment of floods with less than 10 year return periods (hydrographs for these events were not provided). Even if such data was available to perform simple water volume balances, the lack of metals data in sediment particle size distributions and supporting documentation for the settling basin efficiencies does not permit determination of the quality of water which may bypass the Ponds. The assessment of the treatment efficacy of the proposed alternative for floods with short return periods is crucial, since these events are those which are more likely to occur within a given period of time. For example, the probability of a flood equal to or exceeding a 5 year flood in a 5 year period is .65, but the probability increases to .90 in a ten year period. The FS has not convincingly demonstrated that proposed alternative 3 will result in the meeting of chronic water quality criteria during about 8-9 months out of any year at flows much greater than about 100 cfs.

The agencies have proposed, however, an alternative which partially recognizes the compelling need to manage and control flows greater than base in Silver Bow Creek before these flows reach the Warm Springs Ponds. The proposed alternative falls far short, however, of managing flows so that effective treatment is achieved.

The agencies should develop a new or revised proposal to manage flood flows in the Silver Bow Creek Basin. This alternative should have as its goal the regulation of all reasonably expected flows during the design life of the alternative such that they do not exceed about 100 cfs at the inlet structure of the upgraded Ponds. The alternative should have as a further purpose the prevention of significant sediment loads in the inflow to the Ponds, since the treatment of such contaminated flows in the upgraded Ponds to chronic water quality criteria is not likely. By doing this, the sedimentation rate in the Ponds would be reduced, thereby extending their

"lifetimes". It is clear that flood control or management structures on tributaries to Silver Bow Creek above the Warm Springs Ponds are a conceivable mechanism to achieve these purposes. Such structures could, in principle, be used to predictably manage the flows entering the Ponds. By so managing these flows to levels which the Ponds are predictably able to treat, the sediment load in the inflow will also be significantly reduced. Although it is certain that sediment concentrations will be elevated under certain meteorological conditions in the inflow even with flood management structures in place, it would seem possible to manage the storage capacity of Pond 3 to adjust retention times and to control and manipulate inflow and outflow pH values to achieve necessary outflow water quality.

There is no evidence that the agencies have developed such an alternative. It is not at all clear why this is so, since the most recent version of the State's Flood Modeling Study contains a discussion of potential reservoir sites upstream of the Warm Springs Ponds on Silver Bow Creek and its tributaries. (The proposed location of the alternative 3 settling basin is not identified in this document as a potential reservoir site). The reservoir sites were intended, according to the Flood Modeling Study, to "...store flows up to (the) 100-year flood, thus reducing peak flows in Silver Bow Creek. The dams would not normally store water, but would capture and regulate high flows to help mitigate possible downstream contamination." The agencies have already done some preliminary work needed for the development of a flood control alternative, and should proceed with complete development as soon as possible.

The upgrading of the Pond treatment system, the necessary stabilization of all berms, and the removal of tailings from Mill-Willow Bypass should be segregated from development of flood control alternatives. Work should begin on the upgrading, stabilization and removal activities this construction season.

The most obvious and widely perceived effect of the Warm Springs Ponds operable unit is the frequent fish kills which occur during or immediately following intense summer thunderstorms. It has been long suspected that the solution of acidic metal salts on the surface of tailings along Mill-Willow Bypass during thunderstorms and their introduction into the upper Clark Fork River at acutely lethal concentrations is the cause or primary contributing factor to these fish kills. Data collected during the summer of 1989 confirm that water in Mill-Willow Bypass during intense summertime thunderstorms can contain acutely toxic concentrations of metals and acid. There is little disagreement that removal of the Mill-Willow Bypass tailings is necessary.

The removal of these tailings, however, is closely coupled to the stabilization of the Pond berms from earthquakes and floods. The stabilization of the downstream faces of the berms against the MCE would require that the berm crests be widened and the downstream slopes be

flattened. The reconstruction of the downstream berm slopes would necessitate the excavation of tailings and sediments from these areas to a firm foundation. The protection of the berms from flooding will require the raising of most of the berms. The raising would need to be accomplished so that the required downstream slope angles would be achieved for seismic protection.

Before such construction can commence, including removal of tailings from the Mill-Willow Bypass, agreement must be reached on the hydrograph for the PMF, and the fraction against which the berms are to be protected. The agencies have calculated ranges in peak and volume for the design PMF. Peak flows range from 128,000 to 210,000 cfs, with volumes of 323,000 to 467,000 acre feet. .75 PMF values for these peak flows range from 96,000 to 157,000 cfs. ESA (1989) has calculated a best estimate of the PMF of 80,000 cfs, but has used a flow of 60,000 cfs for feasibility level design purposes. This flow is one-half of a peak flow of 120,000 cfs, but equates to 0.75 of ARCO's best estimate of the PMF.

The degree of upgrading of the Pond treatment system will also influence berm configuration. Detention times must be sufficient in the upgraded system so that runoff inflow is treated to the chronic water quality criteria, and the volume of water retained in the upgraded Ponds may need to be adjusted to achieve the necessary degree of treatment. The berms must be constructed so that overtopping of impounded water does not occur.

Agreement should be reached on the peak flow of the best estimate of the PMF, and design for the removal of the Mill-Willow tailings and stabilization of the berms should commence. If design and contracting requirements do not permit construction to be completed in 1990, the dikes at the head of Mill-Willow and near the discharge from Pond 2 should be installed to prevent summertime fish kills.

The FS indicates that substantial risk of dam failure from moderate earthquakes and large floods exists for the Ponds. The environmental effects of such a failure may be catastrophic in proportions. Substantial risk of additional fish kills exists as long as contaminated tailings are allowed to remain in the Mill-Willow Bypass. If negotiations on the degree of Pond upgrading or flood protection break down, it is suggested that the agencies order work to begin in 1990 to reduce these risks.

As is discussed below, the agencies should have conducted an incremental hazard/risk assessment to choose a level of protection for the Ponds. Having failed to do that, the agencies should include sediment volumes in the protection level criteria. Doing so will yield protection levels for the berms of close to 0.75 PMF. Since ARCO has chosen 0.75 PMF as a feasibility design level, perhaps agreement on the cfs associated with that fraction of the PMF is possible.

The source of contaminants in Mill and Willow Creeks should be identified and eliminated as part of the Warm Springs Ponds response. Until then, Mill and Willow Creeks should be routed into Pond 3 for treatment.

Alternative 3 proposes to route Mill and Willow Creeks into Pond 3 for treatment because the RI data (MDHES and EPA, 1989) indicates that the chronic water quality criteria for copper is exceeded in these waters. The FS does not identify the source of this contamination, and does not propose a source control element in proposed alternative 3.

The recognition of the presence of the copper contamination and the proposal to route the contaminated flows into Pond 3 as a sole remedy is insufficient. There apparently exists some evidence that certain reaches of Mill-Willow Bypass are used for spawning by fish, and the Bypass may be used as a migratory channel. Irrespective of the overall significance of this use, the proposed permanent routing of Mill and Willow Creeks into Pond 3 will eliminate environmental opportunities which may now and later be significant for fisheries in the area.

On the other hand, continued titration of the upper Clark Fork River with chronic-acute concentrations of toxic metals is unacceptable. The routing of Mill and Willow Creeks into Pond 3 would reduce this, **if all contaminated flows are treated.** However, it is unclear if this will occur, since the agencies apparently did not model flooding from the Mill and Willow Creek drainages. It is therefore not at all clear that the proposed routing of these waters will achieve the intended purpose.

Clearly, as an interim measure, routing of contaminated flows in Mill and Willow Creeks into the Pond system for treatment is necessary, provided that elevated metals concentrations in Mill and Willow creeks are confirmed. Equally as necessary is the assurance that these flows, in addition to others which will enter the system, will receive efficacious treatment, and the agencies should make this demonstration. It is also clear that the identification and removal of upstream sources of the contamination in Mill and Willow Creeks is imperative, so that the diversion of them into the Ponds will last as short a time as possible.

The sources of contamination in Mill and Willow Creeks are without a doubt not in the Warm Springs Ponds operable unit, and this may be interpreted to signify that the sources are therefore not the responsibility of the management of the Warm Springs Ponds. The agencies should reject this interpretation and respond to this contamination as a removal situation relevant to the Warm Springs Ponds operable unit. Alternatively, the response sequencing for the operable unit in which the Mill and Willow contamination is situated must be adjusted to remove the contamination as soon as possible.

The level of flood protection afforded the Warm Springs Ponds should be based on an incremental hazard-risk assessment. Alternatively, the

level of PMF protection selected should include the volume of contaminated sediments.

Alternative 3 proposes flood protection levels which are found in the State of Montana Dam Safety regulations for high-hazard dams, to protect life and property from inundation. Based upon dam height and capacity of the Warm Springs Ponds, alternative 3 proposes the following PMF levels of protection for the system: Pond 1, 0.2 PMF; Pond 2, 0.3 PMF; and Pond 3, 0.5 PMF. The proposed levels of protection do not take into consideration the volume of hazardous wastes contained within the Ponds. It is these wastes which pose significant threats to public health and the environment. If the wastes are considered, the PMF protection level for Pond 1 would be 0.5 PMF; for Pond 2, 0.5 PMF and for Pond 3, including tailings and contaminated soils above the Pond, very close to 0.75 PMF. The volume of wastes contained in Ponds 1 and 2 is about 70% of that contained in Pond 3 alone, the Ponds consist of an integral system, and the level of PMF protection applied should recognize this. The level of PMF protection applied to each Pond should be 0.75 PMF.

The agencies should have performed an incremental hazard-risk assessment to identify at which PMF level the hazard/risk resulting from failure of the system does not change. For example, system failure should be simulated at incremental levels of PMF protection, until the hazard-risk associated with system failure reaches a plateau (assuming it does). The level of PMF protection to be provided to the Pond system would then be that level where the increment in hazard\risk approaches zero. It could be that the hazard/risk associated with a system failure at .7 PMF is not greater than that associated with a .5 PMF failure. The level of PMF protection would then be 0.5 plus an adequate safety margin for the entire Pond system.

The agencies should have included alternatives that evaluate treatment technologies for the hazardous wastes at the Warm Springs Ponds.

There are an estimated 19,000,000 cubic yards of contaminated bottom sediments in the Warm Springs Ponds operable unit. The Phase II RI conducted an extensive sampling and analysis program for these sediments, and results of bottom sediment lithology and chemistry are briefly summarized below.

In general, there are four lithologic zones in each Pond. Zone A, the uppermost and up to five feet thick, is a black, saturated clayey silt. Zone B, which lies below Zone A is a saturated, brown-orange clayey silt about two to seven feet thick. Zone C, which lies below Zone B, is three to seven feet thick, and is a dark grey, saturated sandy silt with organic material intermixed. Zone D is the original Pond bottom substrate.

Metals concentrations vary within these lithologic zones in the Ponds. Zone C has the highest average arsenic concentrations in all Ponds, while Zone B has the highest cadmium, copper and zinc concentrations in Ponds 2

and 3. In Pond 1, on the other hand, the highest concentrations of these metals were found in Zone C.

The metals concentrations in the bottom sediments in the Warm Springs Ponds also vary between the Ponds. The highest average arsenic and lead concentrations were found in Pond 2, while the lowest average concentrations were found in Pond 3. Pond 3 contained the highest average cadmium, copper and zinc concentrations, while Pond 1 contained the lowest concentrations of these metals.

pH values varied across the Ponds from 8.2 in Pond 3 to the slightly acidic value of 5.6 in Pond 1. The average oxidation-reduction potential of the Ponds is near zero, but is slightly oxidizing in Pond 1. The oxidation-reduction potential data suggest oxidizing conditions exist in Zones A and B in the Ponds, while reducing conditions are indicated in Zones C and D.

The Phase II RI suggests that the mineralogical data obtained on pond bottom sediments implies that the majority of the metals may be transported into the Ponds as sulfides or absorbed to other minerals. It is likely that metals also exist in the Ponds as hydroxides, silicates and oxides.

The pond bottom sediments clearly are not a uniform matrix, chemically or physically, and treatment of them to remove metals for recycling or repository deposition presents a significant challenge not only to treatment technologies, but also to the scales to which such technologies (if they are effective) would need to be applied. Even so, the agencies should have developed alternatives employing proven or innovative treatment technologies, since the metals in the contaminated sediments should be viewed as a potential resource, in addition to being a significant present and future threat to public health and the environment. Possible technologies might include biological treatment or proven metallurgical techniques for metal extraction. The analysis of treatment technologies would have identified whether they were effective; how their effectiveness could be improved; and whether or not they might be applicable to other operable units. The analysis may have been able to suggest new technologies, perhaps consisting of combinations of individual techniques, that might be applicable to the waste matrices in the Ponds.

Heavily contaminated tailings at Warm Springs Ponds should be removed from the floodplain following permanent cleanup of upgradient sites.

There are an estimated 1,900,500 cubic yards of tailings deposits and contaminated soils in the Warm Springs Ponds operable unit. Of this total, about 75,800 cubic yards of tailings and 130,000 cubic yards of contaminated soils are estimated to be in the Mill-Willow Bypass; about 90,300 cubic yards of exposed tailings and about 1,130,000 cubic yards of vegetated tailings and contaminated soils are situated above Pond 3; and

about 474,000 cubic yards of tailings and contaminated soils are located below Pond 1. The proposed plan would excavate all of these tailings and contaminated soils which exceed action levels of 250 mg/kg arsenic and 750 mg/kg lead and dispose of them in Pond 1, but does not provide an estimate of the volume of wastes with metals concentrations above these action levels. Pond 1 would then be covered with a RCRA cap, and all excavated areas and Pond 1 would be vegetated.

The estimated 75,800 cubic yards of exposed tailings in Mill-Willow Bypass are significant contributors of toxic metals and acid which are no doubt responsible for acute fish kills during high intensity, short duration summertime thunderstorms. There is no disagreement that these tailings should be removed from the Mill-Willow Bypass. They should also be removed from the historic Silver Bow Creek 100 year floodplain, and retained in a local waste repository until such time as the metals may be removed and recycled. The action levels of 250 mg/kg arsenic and 750 mg/kg lead are clearly health based criteria. The FS has not provided evidence that removal of contaminated tailings to these levels provide protection against future fish kills or chronic effects. The action levels must include criteria for copper and zinc, and must be set with appropriate consideration of the potential mobilization of those metals remaining on site after the removal.

The necessity for a local waste repository or repository system is clear. The agencies need such a facility in order to be able to effectively evaluate alternatives for all the operable units in the Clark Fork sites. Without waste repositories or a system of repositories available locally, the only alternative is shipment to out of state repositories, assuming that one can be found which will accept the wastes. The cost of moving any significant volume of volume of wastes to out-of-state facilities is high, and significantly inflates the cost of alternatives which contemplate waste removal. It follows that alternatives which propose to leave wastes in floodplains or otherwise <u>in situ</u>, and to perpetually manage the wastes by institutional controls and/or engineered structures and devices become attractive simply because of perceived cost differences which do not include the cost of their failure. This results in incomplete feasibility studies, and deprives the public of the opportunity to effectively participate in the Superfund process, since the menu of alternatives which the agencies offer for remediation is incomplete. The public does not have the resources to fund the development of FS alternatives for itself, and thus cannot complete its own menu.

It is unlikely that a local waste repository could be constructed in the very near future. The process of siting, public comment and construction could take several years. The construction of a system of repositories would take much longer, but could be phased. It is clear that the Mill-Willow tailings will need to be temporarily stored as an interim measure in a situation that minimizes threats to public health and the environment, since their removal from the Bypass is required as soon as possible. If a permanent waste repository cannot be established to handle Mill-Willow tailings removed in 1990-1991, it may be possible to locate a

temporary storage site out of the historic Silver Bow Creek 100 year floodplain as an interim measure. The expedited response for the Beryllium wastes at the Anaconda Smelter Site has shown that waste repository siting can be accelerated, and the agencies should initiate the siting process without delay.

The proposed plan is not a permanent solution for the Warm Springs Ponds operable unit. The treatment effectiveness of the Ponds may have been significantly overestimated in the FS.

SARA Section 121 (b) (1) requires that "Remedial actions in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substance, pollutants, and contaminants is a principle element, are to be preferred over remedial actions not involving such treatment". The proposed plan does not permanently or temporarily reduce the volume or toxicity of any of the wastes presently situated within the Warm Springs Ponds operable unit, nor does it permanently reduce the mobility of the wastes.

The proposed plan does not provide for any permanent or significant reduction in volume of any wastes presently in the operable unit. It is clear that the proposed plan will in fact result in a significant increase in the volume of wastes in the Ponds, simply because the proposed plan requires that the Ponds continue to operate. Continued operation will result in the volume of Pond bottom sediments being increased, perhaps by as much as a third or more within 10-20 years.

The proposed plan will not result in the reduction of the toxicity of any of the wastes presently within the operable unit. Certain of the elements of the proposed plan may reduce exposure to wastes, but the actual toxicity will be essentially unaffected. Because the wastes will not be treated to remove the toxic metal fractions within them, continued societal attention will be required to prevent exposures to the wastes. On the other hand, the removal and dumping of certain soils and tailings into Pond 1 may possibly result in a dilution of concentrations of certain metals. If so, this still does not result in the reduction in the inherent toxicity of the wastes in the place to which they are moved. Furthermore, it is not at all clear that wastes which are not removed will be permanently or significantly reduced in toxicity. The proposed plan would remove tailings from the Mill-Willow Bypass which have arsenic and lead concentrations greater than 250 and 750 mg/kg, respectively. The proposed plan is silent on the copper and zinc concentrations which will remain in the wastes which are not removed. The FS is also silent about the present solubility of these metals, the potential for oxidation of them to soluble forms, and their future potential for mobility.

The proposed plan argues that water leaving the operable unit will be reduced in toxicity. Supporting experimental data reported in the Phase II RI suggest that a reduction in toxicity is to be expected under base flows. (The volume of toxic materials in the Ponds will necessarily be increased

as a direct result, as discussed above). During runoff, however, the supporting experimental data indicate that the chronic water quality criteria will not be met.

The proposed plan will result in a temporary reduction in mobility of the wastes within the operable unit. The protection of the berms to an MCE and 0.5, 0.3, and 0.2 PMF will presumably prevent the release of wastes if the MCE and PMF which will happen do not exceed the engineered protection level. The FS is silent as to whether or not the levels of PMF protection proposed are in any way related to the actual potential for mobility of any of the wastes in the operable unit. There is no evidence in the FS that simulations have been made to allow study of the effects on Ponds 2 and 3 of a 0.4 PMF event or of the effects of a 0.7 PMF event on the entire system.

The FS recognizes the existence of contaminated groundwater within the operable unit, and the proposed plan would intercept the northward flow of the shallow aquifer by means of interception trenches below the Pond 1 berm. The proposed plan would also use trenches to dewater Pond 1; to intercept groundwater flowing from the east; and to intercept seepage from Pond 2 into Pond 1. Intercepted water would be pumped up to Pond 3 for treatment. The source of the contaminated groundwater below the operable unit is the contaminated wastes in the operable unit. The Phase II RI pond sediment data clearly indicate that the significant source is Pond 1. The mechanisms for groundwater treatment in the proposed plan are at best temporary, will require continual societal maintenance and ministrations, and are therefore not permanent solutions. A permanent solution for the contaminated shallow aquifer will require source control of the contaminated sediments through removal and treatment.

The FS is silent in regards to any treatment for the contaminated deeper aquifer. This aquifer contains elevated concentrations of sulfate, zinc, iron and manganese in comparison with the upgradient wells. While the concentrations of these metals are less than in the shallow water, a contaminated plume is clearly evident. Given sufficient time, it is possible that contamination of the deep aquifer will increase. The proposed plan contains no remediation for this aquifer, either temporary or permanent, to reduce mobility of this plume or to control the source of the contaminants in it.

Groundwater inflow to the Mill-Willow Bypass has been calculated to be at least 3 cfs, with inflow components originating from both the Warm Springs and Opportunity Ponds. Water in the Bypass was sampled during the Phase II RI when water in Mill and Willow Creeks was being diverted into Pond 3. The results showed that the chronic water quality criteria for copper was exceeded in this Bypass flow which originated from groundwater. The proposed plan offers no treatment for this water, nor any proposal or plan for interception. As well as can be determined from the proposed plan, this flow will continue to the Clark Fork River. There is no assessment of the effects of this flow on water quality in the Clark Fork during very low flows. It may be that this flow will be diluted by the outflow from Pond 3 under the proposed plan, and that chronic water quality

criteria will not be exceeded. If this is the case, then dilution will be responsible for meeting ARAR's, not treatment or source control. The total metals load in the groundwater recharge to Mill-Willow Bypass will not be reduced by dilution, and therefore the mobility of the metals will be unaffected.

As was discussed above, the effective lifetime of 80 years given in the FS and the proposed plan for Pond 3 may be a significant overestimate. The treatability studies indicate that a realistic lifetime for Pond 3 lies between about 6 and 80 years, and previous sedimentation rates indicate a lifetime of between 10 and 20 years. The schedule for removal of all contaminants from the floodplain in the Streamside Tailings and Area 1 operable units is not provided in the FS or in the proposed plan, but is unlikely that all contaminants in these operable units will be removed from the Silver Bow Creek floodplain in the immediate future. Provision therefore needs to be made in the proposed plan for continuing upgrades of the Pond system as its efficiency decreases. A solution which requires continued maintenance and ministrations is not permanent, but is temporary.

The proposed plan offers no permanent reduction in the volume of wastes in the Warm Springs Ponds operable unit, In fact, the proposed plan will require an increase in waste volume. The toxicity of the wastes presently situated in the operable unit will not be reduced permanently or temporarily, even though exposure to a portion of these wastes may be temporarily reduced. The toxicity of surface water flowing through the operable unit will be reduced under base flows, but chronic water quality criteria will likely continue to be exceeded at runoff. Some contaminated groundwater would be reduced in toxicity, but portions would not receive treatment at all. The mobility of the wastes presently in the Ponds may be temporarily reduced from certain floods and earthquakes, but not from all such catastrophic events.

The proposed plan is neither a permanent solution, nor can it be described as a satisfactory temporary solution. The mobility of the present wastes must be reduced based on recognition of their volume, toxicity, ability to bioaccumulate, and mobility, and the costs to society should any interim solution fail during the design lifetime. At least 0.75 PMF appears reasonable as an impoundment design criterion. Transport of additional wastes into the operable unit must be reduced at the source as an integral part of any temporary solution. Since source control of these wastes will be a long term effort, control of flooding is clearly required now. A new alternative should be developed which evaluates upstream flood control structures for this purpose to prevent bypassing. Removal of wastes from Mill-Willow bypass and other locations must be controlled not only by health based criteria, but also by their chemistry and potential for environmental effects. This removal and the protection of the Ponds from floods and earthquakes could be phased to proceed as soon as possible. All surface water leaving the operable unit must achieve the chronic water quality criteria and other applicable standards for all constituents by treatment, not dilution, including groundwater recharge.

Clearly, the agencies will need to revise the proposed plan to develop

additional temporary alternatives for flood control; surface water treatment; waste removal, storage and treatment; and reduction of waste mobility. The revised plan should demonstrate an intention to develop alternatives for permanent solutions including: removal from the floodplain, storage and treatment of all wastes in the operable unit; the complete removal and treatment of all sources of wastes upstream and upgradient of the operable unit; and the treatment of all groundwater within and downgradient of the operable unit to water quality standards for all applicable constituents.

Interaction between sites and sequencing of remedial response at the Warm Springs Ponds.

The Warm Springs Ponds are closely coupled to other Superfund sites and operable units. Surface water contamination enters the Ponds from Silver Bow Creek, and the contamination originates from at least 3 other operable units in Butte and along Silver Bow Creek right to the Ponds. Surface water contamination in Mill and Willow Creeks probably originates in the Anaconda Smelter Superfund Site. Contaminated groundwater entering the Warm Springs Ponds operable unit also originates from the Anaconda site. Any remedy proposed for the Ponds, either temporary and interim, or truly permanent and final, cannot ignore these realities.

The Warm Springs Ponds are unique in that they have as one primary function the supposed treatment and removal of wastes originating off-site. It follows then, that decisions on permanent remedies for the Warm Springs Ponds cannot be made until the degree of cleanup to be achieved through interim or permanent remedies at upstream and upgradient sites has been decided. The Ponds must function as a treatment system for Silver Bow Creek until such time as water quality in it meets the applicable criteria under all conditions upstream of the Ponds. Similarly, any contamination in Mill and Willow Creeks and Opportunity Ponds must be eliminated before final response at Warm Springs may occur.

It seems logical that the Warm Springs Ponds FS would therefore have developed and evaluated an alternative, or range of alternatives, which recognized the need for a phased response at this operable unit. It seems clear that these alternatives would have recognized and quantified the specific offsite contaminant sources, and considered the remedies and schedules for implementation proposed for them. If no remedies or schedules were proposed, the Warm Springs Ponds FS should have evaluated alternatives which forced the consideration of remedies for offsite contaminants or assumed, as a worst case, that remedies for off-site sources would not be implemented during the effective lifetime of the ponds. No such alternatives are found in the Warm Springs Ponds FS or proposed plan.

Once interactions between sites have been identified, sequencing decisions can be facilitated not only between sites, but equally as

importantly within sites. Perhaps a proposal to treat contaminated groundwater recharging to Mill-Willow Bypass from the Opportunity Ponds would have been made had there been formal recognition in the FS that a permanent solution to this inter-site contamination would not be probable in the near term. Flood and flow control responses relate directly to the Streamside Tailings operable unit, and should have already have been implemented there as a necessary action to prevent releases from that operable unit.

It is clear that the interaction of contaminants between operable units and sites in the Clark Fork basin is significant, and that remedies for any site must be developed in a dynamic and systematic manner which is not narrowly focused on the operable unit at issue. Such site remedies, temporary or interim, must include alternatives which deal specifically with offsite contaminant sources, and must recognize and provide remedies for on-site contaminants which are a source for other operable units or sites. Such a requirement should become a hard policy in Superfund response in the Clark Fork.

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The public participation, public disclosure and environmental analysis used in the Warm Springs Ponds feasibility study was faulty.

Many deficiencies in the state's feasibility study resulted from a faulty process for public participation and environmental analysis. Establishment of a sound public participation and study process in the Warm Springs Ponds feasibility study would have been important because it would have helped produce a higher quality preferred alternative, and a cleanup plan that would have received broader public support. It also would have established a better precedent to be used at other Clark Fork Superfund sites. **We recommend strongly that the public involvement process be revised before the state and EPA produce more feasibility studies at other sites in the Clark Fork River Basin.**

In future Superfund studies, the state and EPA should comply with the National Environmental Policy Act, or at least demonstrate they can produce a "functional equivalent" of the NEPA public involvement requirements for CERCLA remedial investigations and feasibility studies. NEPA provides a proven framework for public participation, public disclosure of impacts and thorough environmental analysis. Because the Warm Springs Ponds cleanup is a major **federal** action (a CERCLA decision) significantly affecting the human environment, we conclude a NEPA EIS, or a functional equivalent of it and its public participation process should have been required.

EPA told the Clark Fork Coalition in 1988 that the agency did not have to produce NEPA documents for Superfund because "the process is functionally equivalent to the NEPA process." (see letter of R. Fox to P. Tourangeau, 11/23/88, and accompanying memo from R. Perry, associate administrator and general counsel of EPA, to R. Lavelle, 9/1/82). But the memo doesn't positively conclude that all Superfund studies are exempt from NEPA, and in fact, it admits the legal case for exempting "remedial" actions and "planned removals" is weak. The general counsel's opinion on NEPA exemptions is based primarily on the EPA's need to move expeditiously on **emergency removals**, which is not the type of action contemplated at the ponds or at most sites in the Clark Fork Basin. Nevertheless, if the ponds action is indeed legally exempt from NEPA, the public participation process used in its remedial investigation-feasibility study still has not been a "functional equivalent" of that required by NEPA.

NEPA requires:

- the environmental impacts of a proposed action be revealed. The ponds study does not reveal significant potential impacts. For example, it fails to discuss the impacts of the proposed upstream catchment basin on groundwater, air quality and aesthetics near the community of Opportunity. It fails to reveal the impacts of potential flooding or contaminated bypasses of Silver Bow Creek flows on downstream ecosystems, communities and other Superfund sites in the river basin. It also fails to address a worst case scenario, which has been identified by the courts as an important component of NEPA analysis.

- any adverse environmental effects which cannot be avoided or mitigated in the proposed action be revealed. The study reveals no such effects, therefore the public must infer there are none, which simply can't be the case. Examples of adverse environmental effects which cannot be avoided in the proposed plan may include loss of certain land uses in the area used for the upstream impoundment, bypasses of contaminated sediments and water into the Clark Fork River during moderate floods and continued groundwater and surface water pollution

caused by water moving through pond sediments.

- the proposed alternative show its effects on the relationship between local short-term uses of the environment and the maintenance of long term term productivity. No such effects were revealed for any aspect of the state's proposed 70-year remedy.

- any irreversible and irretrievable commitments of resources in the proposed action be revealed. None were identified, although there would at the very least be committments of land-use associated with both the Warm Springs Ponds area and the proposed upstream impoundment.

- a broad range of alternatives be presented. Alternatives are presented, including two extremes (Alternative 1 and the No Action Alternative) as required by NEPA. However, the overall range, especially in respect to important aspects such as flood catchment (only one impoundment site presented), is narrow. This is peculiar because the state actually identified many upstream flood catchment sites in its flood modeling study, yet failed to analyze these sites in the Feasibility Study. As a result, significant options identified by the state were excluded from public review.

Important regulations established by the Council on Environmental Quality for NEPA documents were also avoided. Especially troublesome is the lack of public participation in the ponds study process. It included no functional equivalent of the CEQ required environmental analysis (EA) stage, which requires an agency step -- a Notice of Intent or a Finding of No Significant Impact -- that must allow public comment.

There was no scoping period in the early stages of the study process, as CEQ regulations require for NEPA documents. Scoping, because it allows the public to identify issues of concern early on, would have helped develop a more effective proposal and one more acceptable to the public. NEPA also requires decision-making agencies to consult with all federal, state and local agencies that are authorized to develop and enforce environmental standards. This consultation apparently did not occur for this site. Documentation of the consultation must be included in the environmental reports for public review. The study did not include such documentation.

An example of one type of activity that might be considered a functional equivalent to the early stages of public participation in NEPA environmental decisions, is that of the involvement of the Milltown citizens' committee in public review of draft workplans (scoping documents) and workplan negotiations for the Milltown Superfund site feasiblity study. The Milltown committee model, or some modification, should be used at other sites in the basin, ensuring that the public is involved early on in identifying issues. The Coalition offers its assistance to the state in improving its Superfund public participation process using the Milltown model.

The state also fell short in making copies of the feasibility study available to the public, other agencies and local government. For example, many interested individuals as well as the regional office of Fish, Wildlife and Parks, and the Anaconda-Deerlodge local government, were not sent copies of the document. Additional copies were only provided after a public uproar. The flap over document availability amply proved that the state's public participation process is deficient in encouraging public comments. We suggest that the state provide additional copies of all Superfund documents for public review, including draft documents such as workplans, and

that through improved public participation early in the Superfund process it gauge the demand for such documents. All persons who request documents should receive them promptly, and without charge. It is preferable to print extra copies of all documents to provide ample opportunity for public review, rather than to run short and consume valuable public review time in printing additional copies upon request. The added cost of printing sufficient Superfund documents for public review is indeed minuscule when compared to the cost of the actions proposed by the documents, or the potential costs of procedural and legal delays caused by insufficient public involvement.

In addition, the state feasiblity study and the 16-page "proposed plan" document on the feasibility study published by the state and EPA in October were incomprehensible to most of the public. The "proposed plan" document relied heavily on bureaucratic and technical jargon, was poorly organized and far too long. It may actually have discouraged public comment. Coalition staff are very familiar with Suprfund and the ponds, and generally understand the concepts presented in the "proposed plan." Yet we had some difficulty reading and understanding the document - and we asume that if it was hard for us to read, it was a real problem for the general public. Our experience with such publications is that if its hard to read, people just don't read it. The Department of Health and Environmental Sciences has staff specialists capable of interpreting complex documents and writing comprehensible publications to enhance public understanding and involvement. The Department should allow these specialists to do their job.

An important role of good NEPA documents is that they disclose the methods and baseline information used in the environmental analysis of alternatives. Yet the ponds study is lacking in this area. For example, quantitative flood information was not included in the feasibility study, and could only be obtained if you could convince the state to give you a copy of its flood modeling study (of which only a few copies exist.) In addition, other important information found in most good EISs was absent from the pond study. For example, it included no socio-economic analysis, which is found in almost all federal EISs. It also presented little fishery or wildife information. And it did not list the people (and their qualifactions) who contributed to the study, as is the case in most EISs.

If any agency knows what constitutes a good NEPA document and good public participation, it should be EPA. Afterall, the agency is legally required to provide oversight on NEPA decisions of all federal agencies. At best, the feasibility study for Warm Springs Ponds minimally meets some requirements of NEPA, but it fails as a functional equivalent of an EIS.

The state should correct deficiencies in this process before moving on to other Superfund sites in the Clark Fork basin. The state should segregate activities from the proposed plan which may reduce significant human health and environmental risks, and on which relatively little diagreement exists, and negotiate or issue a unilateral order to ARCO to perform this work beginning in 1990. These activities should include removal of Mill-Willow bypass tailings, protection of pond berms against floods and earthquakes, and upgrading of the pond treatment system. Then the state should evaluate other alternatives suggested by the Coalition and others, including upstream impoundments for flood control, and present these alternatives for public review as part of an interim remedy for Warm Springs Ponds. Once upgradient sites are permanently remediated, the agencies should evaluate alternatives for permanent cleanup and closure of the Warm Springs Ponds, including removal of heavily contaminated wastes from the floodplain and cleanup of contaminated groundwater. This may require an amended feasibility study to provide a functional equivelent of NEPA.

NATIONAL WILDLIFE FEDERATION

NORTHERN ROCKIES NATURAL RESOURCE CENTER (406) 721-6705
240 N. Higgins, Missoula, Montana 59802

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AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 31, 1990

Jane Stiles
Solid & Hazardous Waste Bureau
Montana Dept. of Health & Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Ms. Stiles:

I have reviewed the draft clean-up plan for the Warm Springs Ponds on behalf of the National Wildlife Federation. While we appreciate the effort that has gone into the draft plan, we find many shortcomings and believe that substantial changes need to be made before it will be acceptable in terms of either federal requirements or the public health, safety and welfare.

In particular, we have the following concerns:

1. Under the proposal, the present dams at the Warm Springs Pond will be reinforced to withstand a maximum earthquake and a 50-year flood event. While the earthquake standards appear to be adequate, we have difficultly believing that any public agency would propose only a 50-year flood standard in so critical an area. Indeed, we are troubled by the prospect of even a 100-year flood standard being imposed, given that many rivers have experienced this level of flooding in the past couple of decades. At a minimum, the dams must be reinforced to accommodate a 100-year flood if the proposal is to be deemed adequate.

2. As we understand the plan, Silver Bow Creek will be diverted around the ponds in most situations. We believe that there needs to be some treatment of Silver Bow Creek as an interim measure and that this treatment needs to occur through the Warm Springs Pond system. Obviously, when Superfund sites in and around Butte are cleaned up, Silver Bow Creek will no longer be a source of contamination to the Clark Fork River. At this point, such protections will no longer be necessary.

3. We are uncertain whether the agency regards the proposed plan as a permanent solution to the Warm Springs Pond situation. While we believe that strengthening the dams may be permanent insofar as treatment of pond water is concerned, we are extremely troubled by proposals to leave contaminated soils in the Clark Fork flood plain. This concern extends to putting sediments along the Mill Willow bypass into the Warm Springs Ponds, a solution that we find unacceptable. If any sediments are to be removed from the Mill Willow bypass, they should be moved out of the Clark Fork floodplain and into a more stable site. Unless this occurs, the proposed remedy can in no way be regarded as a permanent solution.

Thank you for the opportunity to comment on the Warm Springs Pond proposal. I would appreciate being kept informed as the proposal is redesigned.

With best regards,

Tom France

TF:ca

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& ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jane Stiles
Department of Health and Environmental Sciences
Cogswell Building, Helena, Montana 59620

Ref.: Warm Springs Ponds
Superfund Project

Dear Jane Stiles:

I am writing to you in order to have my thoughts on the proposed Warm Springs Ponds Superfund cleanup alternatives included in the public comment on this project.

I feel very strongly that it is terribly important to get this job done right on the first attempt to clean up the Clark Fork Superfund sites, and therefore would support a more extensive and longer lasting effort to deal with the Warm Springs Ponds situation. I, along with many others I have talked to, would like to see the following steps taken:

1. Have ARCO begin work on the clean up as soon as possible ... preferably this year.

2. Select Alternative 2 of the seven alternative actions now being considered ... while this alternative is certainly not the perfect solution, the other alternatives appear only to irresponsibly and very tentatively postpone the problems we are now faced with at this site.

3. Whatever is decided upon, it is essential that the final product be able to withstand major earthquakes and 100 year floods.

4. It is critical that the water quality below the ponds be left high enough to meet state standards at the 100 year flood stage.

Thank you for your consideration of my comments on this most important project, which hopefully will be the beginning of a productive and permanent effort to clean up the Clark Fork.

Sincerely yours,

Land M. Lindbergh

Land M. Lindbergh

Star Route Box 337
Greenough, Montana
59836

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THE ENVIRONMENTAL CONSULTANT GROUP
P.O. BOX 198
ALBERTON, MT 59820

JAMES J. O'TOOLE Ph.D.
406-722-4439

January 31, 1990

Montana Health and
Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, MT 59620

Gentlemen:

Enclosed please find our comments on the Warm Springs Ponds Operable Unit Feasibility Study. These comments may be considered supplemental to my testimony at the Missoula hearing.

They reflect the views not only of myself but of the West Slope Chapter of Trout Unlimited and the Clark Fork Coalition.

Sincerely,

James J. O'Toole

James J. O'Toole, Ph.D.

Enclosure

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RESPONSE TO WARM SPRINGS PONDS FEASIBILITY STUDY

The MDHES Feasibility Study Report on the Warm Springs Ponds operable unit of the Silver Bow Creek Investigation under CERCLA ("Superfund") has been reviewed with the following comments.

In scanning the document, it appears that attention to cataclysmic events, e.g., "the probable maximum flood", the "maximum credible earthquake" and the "100 year flood", while posing the greater risks and demanding the most urgent considerations, overshadow the inexorable year-to-year erosional processes play a larger role in the transport and enrichment of toxic metals in the downstream environments.

It may be that cataclysmic events are more responsive to engineering remedies, e.g., dams, berms, flow control structures, which have an established record of effective design against such risks, while the erosional transport and enrichment processes and the complex geochemical reactions which drive them are less obvious.

In the case of the Silver Bow Creek/Warm Springs Pond system, it is our view that these latter complex processes in the interim before waste removal should be the targets for understanding and appropriate remedial design.

In meeting the avowed goals of "Superfund", which are to provide a permanent solution and to reduce the volume of toxicity and mobility of waste to levels which "at a minimum protect human health and the environment", both cataclysmic and chronic threats must be abated and remedied.

Although we recognize that no short-term technology or quick

fix is available, removal of sediments and tailings must be considered as a permanent solution.

Removal technologies have not been given a serious or reasoned consideration in the remedial options presented in the WSP F/S, since remedies that allow wastes to remain in the flood plain are certainly impermanent. (Establishing a local RCRA-type site is assuredly more cost-effective than moving these residues to Boise at costs over $245.00/cu.yd.)

If "removal" is accepted as viable and planning is developed, the time frame will of necessity be long, and existing erosional processes are likely to be accelerated, with sedimental transport exacerbated, unless key hydrologic conditions are met. Such potential remedies suggest a phased approach where the conditions for "cleanest" removal possible be established; conditions which would certainly require control of Silver Bow Creek stream flows.

Designs proposed for cataclysmic protection of the WSPs are indeed necessary to contain the 19 million cubic yards of toxic sediments. It must also be recognized that the upstream and downstream tailing deposits pose their own characteristic environmental disaster if they become highly mobile; impacts to a degree proportional to all floods, not simply the PMF or 100-year flood. An urgent and expeditious schedule of removal should be established for these (such as M/W bypass) wastes.

While the "100-year flood" is a commonly used design goal, in this context, it may tend to overshadow the degree of sediment transport taking place annually, along with floods of much more

frequent occurrence. For example, ARCO reports that the average annual accumulation of sediment in Pond #3 since 1959 is 380,000 cubic yards even with bypasses occurring in unknown frequency. Sediment modelling predicts 490,000 cubic yards annually. By comparison, the 100-year flood is estimated to carry 100,000 cubic yards of sediment to Pond #3.

In smaller floods such as the 10-year flood, sediment loads would be smaller than the 100-year flood, but more frequent.

In its flood modelling study, CH2M Hill predicts the 10-year flood would carry 25,000 cubic yards to the ponds. Thus, over a 100-year period, floods of ten-year recurrence would deposit two and one-half times as much sediment as the 100-year flood.

Much more dramatic in its impact on containment and treatment of metal loads is the comparison in which annual sediment loads to the WSP exceed the 100-year flood by a factor of four or five.

It is evident that chronic year-to-year sediment loads place the largest burden, if not on containment, then certainly on the treatment system process. To help understand the nature of the seasonal demands on the WSP treatment system, data on the relationship of streamflow to sediment load should be helpful.

The U.S. Geological Survey assembled data over a 42-month period (4/85-9/88) on water quality, stream flows, and sediment loads on the Clark Fork River and four tributaries in the reach from Deer Lodge to Missoula. The relationship of streamflow to sediment load is the most important consideration in predicting the downstream movement of toxic metals, since sediment movement accounts for most of this transport phenomenon in the Silver

TABLE 1.

USGS FLOW AND SEDIMENT DATA

FOR CLARK FORK RIVER AND TRIBUTARIES

MARCH 1985 TO SEPTEMBER 1988

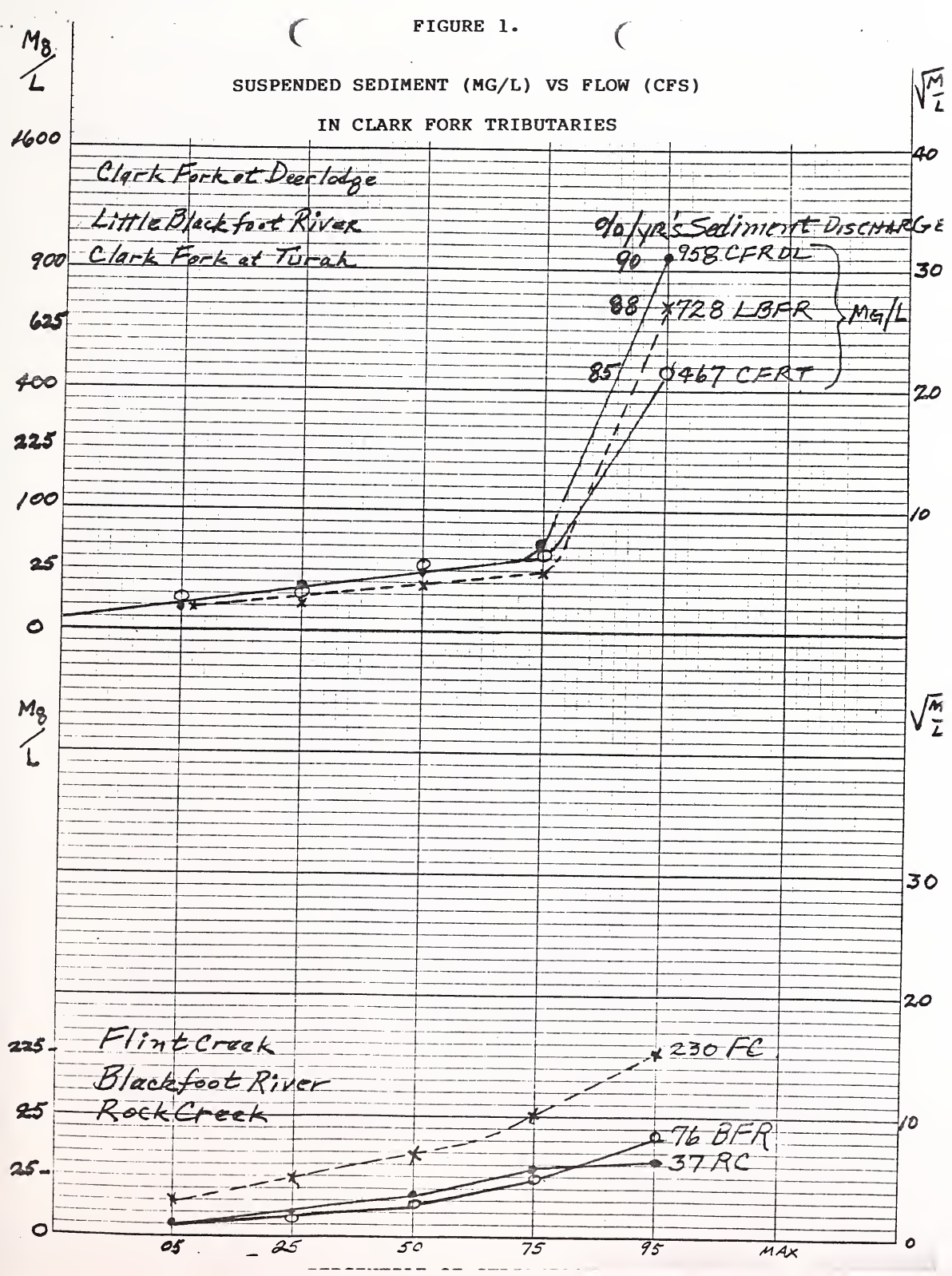
	CL.F.R. D.LODGE	LITTLE BLKFT.	FLINT CREEK	ROCK CREEK	CL.F.R. TURAH	BLKFT.R. BONNER	PERCENT OF VALUES LESS THAN SHOWN
Cu.Ft/Sec	33	37	7.6	175	427	356	
Sed.(mg/L)	3	4	8	1	6	1	5%
Sed.(Ton/d)	0.9	0.5	0.3	0.5	7.4	1.2	
Cu.Ft/Sec	109	103	101	495	809	559	
Sed.(mg/L)	13	5	24	4	10	3	25%
Sed.(Ton/d)	4	1.5	7	8	21	4.4	
Cu.Ft/Sec	213	243	130	778	1160	1200	
Sed.(mg/L)	21	14	43	12	26	8	50%
Sed.(Ton/d)	11	12	15	28	67	21	(Median)
Cu.Ft/Sec	345	312	201	1427	1920	3020	
Sed.(mg/L)	51	23	103	33	42	23	75%
Sed.(Ton/d)	55	15	48	91	229	170	
Cu.Ft/Sec	1100	550	892	1650	5730	5020	
Sed.(mg/L)	958	728	230	37	467	74	95%
Sed.(Ton/d)	3260	1080	554	157	9460	942	
Cu.Ft/Sec	1920*	550	892	1650	9370	5150	
Sed.(mg/L)	1390	728	230	37	1370	76	MAX
Sed.(Ton/d)	7210	1080	554	157	34700	987	

*Maximum observed at Deer Lodge this decade was 2500 CFS (5/22/81)
Maximum peak flow of the 10-year flood model is 4100 CFS.

FIGURE 1.

SUSPENDED SEDIMENT (MG/L) VS FLOW (CFS)

IN CLARK FORK TRIBUTARIES



Bow/Clark Fork system.

This relationship is demonstrated in the data of Table 1 and plotted in Figure 1. The streamflow and sediment loads data are divided into percentile flow regimens where the lowest percentile (and the lowest flows) are shown on top followed by the next increasing three 25 percentiles, followed by the 95 percentile flow and the maximum flow observed during this period.

As Figure 1 shows, the sediment load of these streams increases dramatically when the flows exceed 75 percentile. The figure also shows the much greater increase in sediment load in those streams considered heavily sedimented, namely, the Clark Fork at Deer Lodge and Turah and the Little Blackfoot River, an agriculturally sedimented stream. By contrast, the more forested and protected watersheds of Rock Creek, Flint Creek, and the Big Blackfoot River demonstrate a lesser increase in sediment load between the 75 and 95 percentile of flow.

The Clark Fork River at Deer Lodge increases its sediment load from 55 to 3260 tons per day when flows increase from 75 to 95 percentile. Although it was not included in this USGS study, Silver Bow Creek, which is the upstream source of the Clark Fork in sediment and flows, can be expected to have a similar flow/sediment regimen.

The Clark Fork River at Deer Lodge increased its sediment load by 60 times in going from a 75 percentile flow of 345 CFS to a 95 percentile flow of 1100 CFS. The maximum flow during this period, though less than a ten-year flood, increased the sediment load by 130 times while increasing the CFS by a factor of 5.

On Silver Bow Creek above the ponds, the dramatic increase in suspended sediment load which occurs at flows beyond the 75 percentile would begin around 200 CFS, though modelling may provide a better estimate.

MDHES' preferred alternative #3 recommends continuing to direct high flows into the WSP for treatment with addition of a 2000-acre-foot settling basin upstream designed to function as a flow regulator and sediment trap. The agencies' WSP F/S supplies no engineering data to support the feasibility or effectiveness of such a structure. Examination of the 100-year, 25-year and ten-year flood models presented by CH2M-Hill in their background document shows that the 2000-acre-foot pond would not contain even the ten-year flood as shown below. The pond would be filled before the peak flow was reached.

DATA FROM THE TEN-YEAR FLOOD MODEL*

INPUT/OUTPUT IN 2000 A' POND

Time	Ac-ft In	Ac-ft Out	Ac-ft Held
0-12 hrs	300	300	0
12-24	1050	600	450
24-36	1425	600	1275
36-48	1625	600+	2300-?
48-60	1700	1700	

*From CH2M-Hill "Silver Bow Creek Flood Modeling Study"

As a settling basin, the Pond's effectiveness is similarly in doubt. If the pond is switched in only when flows exceed 600 CFS, the sediment load is already high since Silver Bow Creek flows above 500 CFS are in the 95 percentile.

This option places the WSP treatment system in a position where analytical data show clearly that pond effluent cannot meet

water quality criteria.

On this point, we wish to turn to the ARCO 3A proposal, which presents the option of containing and treating all floods up to and including the 100-year design flood, based on an enlarged pond with changes in inlet and outlet structures. In this case, our principal criticism is concerned with the treatment efficiency of the system, although we have reservations about containing and releasing the larger floods as we stated at the Missoula Hearing.

This fundamental concern is directed at the failure of both the WSP F/S and ARCO's plan to provide assurance that the pond system will reduce metals down to criteria levels at even average annual high flows. The recent and past analytical record shows year-round exceedances. High flow data are absent but would probably be invalid, since most high flows have been bypassed.

ARCO's Alternative 3A plan presents arguments for an enlarged system designed to capture, lime, and precipitate metal complexes from all flows up to the 100-year flood. Removal efficiency is based on a theoretical model with a fundamentally flawed premise. The premise assumes that the sedimentation rate of both incoming suspended sediment and newly precipitated lime/metal floc is the same as core samples obtained from the bottom of Pond 3. Intuitively, one would immediately recognize that an unknown fraction of that suspended sediment load, the fines, could be carried through the system, never settling out under high flow conditions.

Of much greater significance is the whole question of the

liming technology; its efficiency under high flows, the effectiveness of pH control, and the efficiency of metals removal in the incoming streamflow with its high levels of suspended sediment during floods. The limited studies presented in background documents (CH2M-Hill '89) indicate that the high flows cannot be effectively treated under a range of liming procedures.

These studies described a series of static tests on winter samples of Silver Bow Creek water and a field-prepared "runoff" sample that closely resembled the metals concentrations seen in groundwater obtained below Colorado Tailings. Lime was added to these samples with and without sulfide ion to adjust aliquots of the test solutions to pH levels of 8, 9, 10, and 11. These solutions were allowed to stand for a period of 20 days. Samples of the test solutions were removed at timed intervals from one hour to 20 days, and the total and dissolved arsenic, cadmium, copper and zinc were determined analytically.

In the "winter" samples, dissolved copper did not drop to criteria levels except at the highest pH of 11. Although sulfide lowered the dissolved zinc to below criteria levels at pH 9, it did not for dissolved copper.

In the "runoff" samples which had no sediment but much higher levels of dissolved and total metals, the range of pH treatments and incubation times did not lower copper or zinc sufficiently. Cadmium at pH 10 and 11 reached criteria levels, but after five days, the pH began to drop and the dissolved cadmium increased. The decrease in pH below the originally adjusted levels of pH 10, and 11 was apparent after the second day, and continued downward to about pH 8 by the twentieth day.

The factors causing this drop may be a combination of complex chemical rearrangements and carbon dioxide absorption from the atmosphere. In any case, it is questionable whether any practical process can maintain Warm Springs Ponds at a pH of 11 under its large surface-to-volume ratio and wind-generated mixing.

The important role of sedimentation in causing the lime-metal complexes to "drop out" and settle are also ill-defined. These studies have not reported the physical nature of this "sludge"; its density, specific gravity and aging characteristics, although its settled volume indicates a finer, more disperse, precipitate than the typical suspended sediment carried by Silver Bow Creek. The physical nature of this "sludge" suggests that short retention periods and higher current flow in the Warm Spring Ponds during regular high water runoff periods might result in the release of considerable amounts of this material to the downstream environment.

In the light of the longstanding role and questionable effectiveness of the WSP system, it is unfortunate that the most obvious type of experiments were not undertaken. There might have been site-established vessels designed to more closely represent the area/volume ratio of the ponds while exposed to the same ambient weather conditions and employing Silver Bow Creek water during the low and high flow periods. The important unknown, that of the influence and interaction of native Silver Bow Creek suspended sediment with the liming process, and its metal removal efficiency and settling characteristics might have been resolved.

The existing field and laboratory data available support the conclusion that the ponds cannot effectively treat Silver Bow Creek flows with high sediment loads over the range of lime or sulfide treatments anticipated. Under low flows and long retention time, it may be possible with a careful liming process to reach the margin of water quality criteria. Efforts which are most likely to provide improved water quality are those directed at reducing and limiting upstream entrainment and solubilization of metals tailings.

The upstream sources of toxic metals in the Silver Bow Creek watershed have been partially delineated and reported in "Surface Water and Point Source Investigation" in the Remedial Investigation Final Report prepared by Multitech for MDHES. Non-point-sources are estimated to contribute about two-thirds of the total copper and one-half of the total zinc load of Silver Bow Creek. Of the natural tributary point sources, Brown's Gulch is the largest contributor of copper because it flows through Ramsay Flats where it picks up soluble metal salts and also contributes to underlying groundwater, helping to make Ramsay Flats the largest non-point-source contributor of copper, arsenic and lead.

Brown's Gulch water upstream of Ramsay Flats is of good quality. This is also true of the principal natural tributaries of Silver Bow Creek downstream from Blacktail Creek, Brown's Gulch, German Gulch, as well as Silver Lake discharge.

These four tributaries, measured during the "High Flow" period of the Remedial Investigations, accounted for 83% of the flow in Silver Bow Creek. These streams generate the high flows

in Silver Bow Creek which move about 98% of the sediment and raise groundwater levels enabling dissolution of the available metal salts that contribute to the Silver Bow Creek load.

If these four spigots could be regulated, Silver Bow Creek could be limited to stream flows under the 75 percentile flow of about 200 CFS. The sediment transport problem would be reduced by almost two orders of magnitude and the tailing dissolution and toxic groundwater reduced by large, but at this time, imprecise amounts.

In the WSP F/S, remedy of upstream tributary impoundments was not put forth as a considered alternative despite the fact that less realistic and costly options (sediment and tailings vitrification and shipping wastes to Boise, Idaho) were considered. Background documents (CH2M-Hill) show that some consideration to impoundments was made since potential dam sites on these drainages were located and reported.

We urge an in-depth review of this option. The benefits are many, since they spring from a source of impounded clean water, as well as the reduction of highly-polluted water and sediment flows. We take the liberty of listing some of these benefits qualitatively:

1. Attenuation of the annual Silver Bow Creek floods.
2. Attenuation of the 10- to 100-year floods.
3. Reduction of groundwater flows.
4. Reduction of metals solubilization in tailings (Colorado or Ramsay Flats).
5. Reduction of sediment transport.
6. Controlling flows and reducing metal loads to the Warm

Springs Pond system.

7. Stabilizing Silver Bow Creek flows to facilitate the STARS Program.

8. Providing a clean supply of water for community use.

9. Providing a new supply of irrigation water.

10. Lowering flows and sediment loads downstream to the Clark Fork River.

11. Facilitating bank and riparian reclamation and cleanup in the Warm Springs Pond to Deer Lodge reach.

12. Reducing the transport and deposition of toxic Silver Bow Creek sediments to aquatic biotic habitats downstream.

13. Facilitating, by controlling stream flow, the extraction and removal of flood plain toxic sediments.

It would seem that the multiple benefits of upstream impoundments can provide rationale and impetus for cost-sharing proposals targeted to several funding centers.

A glaring omission, despite CERCLA directives, the Benefit/Cost Analysis is nowhere to be seen except through the spectre cast by the unrealistic proposals of "solidification" and shipping tailings and sediments to Boise. Although the Health and Environmental assessments are only sketchy, they simply emphasized the fact that resource economists had no say in the planning process or in assessing the economics of alternatives. Among our final general comments are the following:

Even after a decade of investigations, ecosystem analysis has been casual, ad hoc, and without a guiding plan. Field and laboratory procedures are inconsistent and fequently unclear.

Limited data suggesting potentially critical conditions have not been followed up. Ecosystem techniques have not been applied, yet conclusions have been drawn as if rhetoric and observations made after the fact could substitute for science.

The section on environmental risk characterization is at best self-serving rhetoric. Administratively ignoring the downstream ecological disaster created by toxic metallic sediments in the Clark Fork River, the agencies have disclaimed by omission the need for an adequate field ecosystem program essential to an environmental assessment. The statement on p. 3-47 summarizing environmental risk is an embarrassment and is perceived as an abrogation of responsibility to CERCLA and the public.

The present plan proposed by the agencies does not abate the exposure. Removal of the waste to a secure site is not seriously considered, and mobility of toxic metals continues through the WSP operable unit. The togetherness and interaction of a flowing strema system and the targeted waste has not been uncoupled. Either the stream system must be diverted (to pre-Plestocine courses?), and re-routed (an aqueduct system?) or the waste must be removed and secured with potential recovery options considered.

This massive complex demands a phased approach as EPA and the agencies planning and fractioning into operable units shows. The time frame in bureaucratic terms is considered long.

Summary of our view of Alternatives is as follows:

1. Stabilization of Pond berms to a partial PMF and MCE to

whatever levels the completed risk analysis indicates.

2. Removal of designated tailings from the flood plain as soon as possible to a RCRA or surrogate site established locally to serve the Silver Bow Creek Superfund project.

3. Upgrade treatment ponds as an impermanent mitigation to meet aquatic life water quality criteria. Provide assurance of necessary detention and treatment via an upstream settling pond as recommended in Alternative 1.

3A. Develop a program and design for upstream impoyundments and/or diversion structures to ensure minimal flood flows in Silver Bow Creek.

4. Divert flows of Mill and Willow Creeks into Warm Springs Pond until water quality standards for these streams have been met.

5. Recycle groundwater as proposed.

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FEB 02 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Jan. 20, 1990

To Dept. of Health and Environmental Sciences:

I request that this letter be added to the public comment on the cleanup of Warm Springs Ponds. I am a Montana resident and property owner. I am presently at University of Oklahoma, getting a graduate degree in Aquatic Ecology and Water Resource Management.

I am concerned about the fish kills and the high levels of toxicity that occur during high water events on the Clark Fork River. I feel that Arco should be made to begin its cleanup work as soon as possible. The tailings along Mill-Willow bypass need to be removed from the floodplain - not transferred to the ponds. The tailings could be stored at a nearby site, but out of the floodplain. The site should be designed, of course, so that leachates from the tailings will not contaminate the groundwater. The ponds, as part of an interim solution, need to be upgraded and stabilized so that the river will not receive untreated water at up to 100 year flood events. The water quality below the ponds should be up to the state standards for all flows. The tailings in the ponds are eventually going to have to be processed or removed. We should not add to that sediment load at this point. We should go for a more permanent solution for any tailings that have to be handled.

The state has good water quality standards. These should not be compromised in order to benefit large industry. Please send me notice of the approved cleanup plan.

Thank you,

Sherri Johnson

Sherri Johnson
712 S. Pickard
Norman, Okla. 73069

HEADWATERS
Resource, Conservation and Development, Inc.
305 W. Mercury, Suite 211
Butte, Montana 59701
(406) 782-7333/FAX 782-9675

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MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

January 24, 1989

Neil Marsh
DHES
Cogswell Building
Helena, Montana 59620

Dear Mr. Marsh:

Relative to your request for comments on proposals for the Warm Springs Ponds feasibility study proposed plan and related Silver Bow Creek Superfund Site Report, the Headwaters Resource Conservation and Development Inc. Agricultural Water Committee is strongly supportive of efforts for Water Quality and related multiple uses regarding water conservation.

We are on the side of multiple use development. Therefore, we would strongly recommend your participation in upstream storage projects which will provide instream benefits for flood control, recreation, power generation and water quality, as well as some offstream uses rather than the proposal flood protection project near Warm Springs.

Sincerely,

Dan Ueland

Dan Ueland, Chairman
Agricultural Water Resources Committee

WEST SLOPE CHAPTER
P.O. Box 7316
Missoula, Montana 59807

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FEB 02 1990
MONTANA DEPARTMENT OF HEALTH
& ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Kathleen DeMarinis
c/o Montana Departnemt of Health and Environmental Sciences
Helena, MT 59620

Dear Ms. DeMarinis,

The Westslope Chapter of Trout Unlimited is not prepared to address the technical aspects of the Warm Springs Ponds Proposed Plan. We are primarily concerned with results. We believe that it is vital to maintain and preserve freshwater fisheries.

To this end, we insist that the Warm Springs Ponds dikes be strengthened to withstand major floods and earthquakes. We insist that the tailings from the Mill-Willow Bypass, which have been proven to cause major fish kills, be removed from the floodplain. And we insist that the ponds be redesigned to meet state water quality standards.

Arco's proposed cleanup plan is totally unacceptable. The MDHES preferred alternative is not sufficient. Neither provides a permanent solution.

Sincerely,

Kim J. Reineking, President

KJR/rr

158

1803 TAMMANY • ANACONDA, MONT. 59711 PHONE (406) 563-5432

MELVIN A. STOKKE
ENGINEERING CONSULTANT

D. E. Pizzini
T. J. Opitz
L. Lloyd - L.L.

RECEIVED
JAN 25 1990
MDHES
DIRECTOR'S OFFICE

January 23, 1990

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JAN 29 1990
MDHES
Environmental Sciences Div.

Don Pizzini, Director
Dept. of Health & Environmental Sciences
Cogswell Bldg. Room C-108
Helena, Montana 59620

Re: Warm Springs Ponds - Silver Bow Creek Superfund - MDHES & EPA Proposed Alternate #3

Dear Director Pizzini:

I have reviewed the manuals and documentation presented by MDHES & EPA and disagree with the following:

1. Diverting Mill-Willow Creek into Pond 3.
   (a) This would close the by-pass and forever stop the fisheries on the upper portion of these creeks.
   (b) 27% of the watershed area goes into these creeks.
   (c) Letting the water from these creeks go thru the by-pass would relieve approximately 890 cfs from Pond 3.
   (d) Thus 27% of the PMF (100 yr) would go thru the by-pass.

2. Create an additional tailings pond upstream.
   (a) This would make an additional Superfund site, expanding the area already affected.
   (b) This pond would be dry at times, creating an area where the winds would cause dusting.
   (c) Concern was not given to the community of Opportunity.
      (1) Seepage from the pond could affect the water wells of the property owners.
      (2) Economic values will fall in the community.

3. The cross-sectional views of the tailing dikes does not show any increase in height, just adding to the downstream slope of the No. 2 and No. 3 ponds. When we raised the No. 3 pond dike, we put the downstream slope at 2:25 to 1. This plan proposes a slope of 2:5 to 1, which adds very little material to strengthen the dikes.

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MELVIN A. STOKKE
ENGINEERING CONSULTANT

4. Pond No. 1 would be closed with a RCRA compliant cap.
   (a) The west half of the pond could be closed as above.
   (b) The East half should be maintained as wetlands.
   (c) The Anaconda Company spent years and money developing the wetland with the Department of Fish & Wildlife.

Parts of the MDHES plan are very good and most people agree with those items.
   (a) Removing tailings from the Mill-Willow by-pass.
   (b) Pumping the seepage from below No. 1 Pond back to the head end of the No. 3 Pond for treatment.

Sincerely,

Melvin A. Stokke

Melvin A. Stokke
Former Manager of Anaconda Smelter
Member of Anaconda Deer Lodge Reclamation advocates.

S/j

Dept. of Health & Environmental Services
Helena, Montana 59620

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1-30-90

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FEB 05 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Jane,

Recognizing that the protection of the Clark Fork River & Lake Pend Oreille waters are of vital interest to us all, please take this as a request to follow the recommendation of the Clark Fork Coalition. I have nothing but the highest regard for the organization and support their/our position wholeheartedly, especially the Warm Springs Ponds "Issue."

I regard the following points to be of critical importance.

The ponds should be fixed to withstand major earthquakes & floods. The mill Willow bypass tailings should be removed from the floodplain to prevent fish kills. You should also ARCO to start this work immediately in 1990.

The proposed cleanup plan is not a permanent solution. All wastes should be removed from the floodplain & develope new technologies

to extract the metals from the wastes.

The interim solution should include some combination of dike raising & upstream flood impoundment or tributaries & on Silver Creek to capture & effectively treat all flows up to the 100 yr. flood, while meeting state water standards below the ponds.

All 3 ponds should be built using the most conservative design criteria. An incremental risk assessment should be done to determine the appropriate level of protection if the wastes are to be left in the floodplain

Jane, please make your very best efforts.

Thank you

Don C Holland

Rebecca Holland
9345 Cabinet-Caliber
Sandpoint, Idaho 83864

160

D.R. Stoecker
Georgetown Lake
Anaconda, MT 59711

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FEB 06 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Dear Jonie Stiles

I know this comment will be received a little late, but any way. Warms Springs Ponds Proposed Plan. like a lot of others I like the Area overall plan the best. No 3 pond Dike is the least stable of any. In your plans and also Areas I can read of no way that the dike will be stabelyed if a real disaster does occur. Floods or earth quake. My proposal is to drive 30 to 40 ft pilings down thru the center of the dike abut 18 inches to 2 ft apart. Then if the dike did give way these pilings would hold back the sediments in the pond.

In case of flooding why can't two

more dams be build that will be closed if there is excessive flooding. When the danger is past the water can be released. Especially where Silver Bow Creek is concerned. Of course the old railings should be removed from the mill Willow-Bypass.

Sincerely
Dock Foster

(161)

RCM CAPITAL MANAGEMENT
A California Limited Partnership

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FEB 05 1990
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

February 2, 1990

Ms. Jane Styles
Department of Health and
Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Ms. Styles:

Please pardon the lateness of this letter, which has to do with the proposed cleanup plan for the Warm Springs Ponds and other improvements affecting the Clark Fork.

I am one of ten partners of Crystal Creek Ranch in Turah. Throughout any year, I would approximate that over 2,000-person days are spent in Montana by our various members, their families and friends -- in which time considerable dollars are spent in Montana on everything from fishing guides to food purchases to fuel and other transportation needs, etc.

What has happened in the upper reaches of the Clark Fork is most disturbing to us, as I am sure it is to you. We believe very strongly that:

(1) The proposed cleanup plans are anything but a permanent solution. The appropriate agency should seriously consider removing all the wastes from the flood plain, possibly locating disposal sites and applying newer technologies to extract the metals from the wastes.

(2) The ponds should certainly be made to withstand major quakes and floods; and the mill-willow bypass tailings should be removed from the flood plain to prevent fish kills. I cannot understand why the agency should neglect ordering Arco to perform this work immediately -- in time for the 1990 normal fishing year.

(3) We would hope that the interim solution will include some combination of upstream flood impoundments, dike, raising, etc. to treat flows.

(4) Water quality below the ponds should certainly meet state standards at flows up to 100-year flood.

(5) All three ponds should be built using the most conservative design criteria.

I hope that you will consider our pleas to you and other agencies to do right by the people who have found the Clark Fork to be the attraction that

it is, to say nothing of the needs for proper kinds of environmental protections which have not existed in the past.

Thank you very much.

Very truly yours,

Claude Rosenberg

Claude N. Rosenberg, Jr.

CNR/ram

George Bush, President of United States

Stan Stevens, Governor of Montana

John Wardell, EPA Chief for Montana

Department of Health and Environmental Services, Montana

Bill Williams, Chief of ARCO in Montana

Peter Nielson, Clark Fork Coalition Director

February 21, 1990

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FEB 27 1990

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID & HAZARDOUS WASTE BUREAU

Gentlemen,

There is a saying which my father was very fond of and which has often guided my thinking in the last 30 years, "When you are up to your ass in alligators, it is hard to remember that your main objective is to drain the swamp." Too often, people become so obsessed with the presence of the alligators in their problems they fail to see that draining the swamp is crucial to removing those alligators permanently.

We spend a great deal of public and private monies trying to eliminate various alligators from our lives. It makes very little difference how much studying we do or how efficient our solutions might temporarily be - if all we do is create other swamps in the process. There is only one way to really clean up a contaminated area - remove the contaminate. This is the first logical step and one which everyone seems to be in agreement upon.

However, the second step, which has to do with handling the removed contaminate, cannot be agreed upon for none of the offered solutions (except one) actually addresses the real problem. All other solutions offered only create better swamps.

I believe that a well thought out plan in any situation will bring rewards and satisfactions to all the parties concerned. Too often, we are spending unproductive time trying to assess blame on someone else without trying to work out an agreement beneficial to them as well as to ourselves. The Clark Fork Coalition and I have arrived at basically the same conclusion although maybe not

for the same reasons. I approached the problem from the objective of draining the swamp and eliminating the personal alligators of everyone.

I fit into the everyone category because what happens in Anaconda, Montana directly concerns me. I live here. This is the air I breathe and the water I drink. I want both to be safe and my home to be a place free from hidden dangers. Anaconda itself is a place which has suffered through the economic woes of losing its main industry along with the property tax revenues and discretionary income from the job force once employed there. Since "no man is an island unto himself", it also follows that what happens in Anaconda, Montana will and does have an affect on other regions through the environment and through the economy of the State of Montana.

I am also an environmentalist solely because I believe that God made mankind the caretaker of this planet and each of us has to assume that responsibility.

The State of Montana and the Government of the United States must be concerned about what is ultimately done to solve this problem. When all the spending has been done and all the (temporary) solutions have been acted upon - the State and the Federal Government will ultimately have to deal with whatever new swamps were created during the process. Regardless of what euphemisms are coined for waste dumps they are always going to be swamps and regardless of how well they may be constructed they will eventually fall apart. (Leaving some future generation with problems of their own to deal with our thoughtlessness.)

I am most concerned with the vast sums of money which the current plans will consume when this money could be put to work in designing and building a creative solution which would profit everyone.

Throughout the United States and the world there are other Anaconda, Montanas and Clark Fork Rivers facing the enormous task of undoing the damages done during the Halcyon Years when environmental dangers were unknown and unrecognizable. This is a problem which stands to get worse as more and more contaminates become

recognized as health and environmental hazards.

The trouble with finding solutions today, in my opinion, is that everyone tends to think FIRST of the enormous costs (that might be only imaginary illusions in actuality.) While costing money in start up funds, my proposal is likely to reap more of a monetary harvest than any which is being considered. I call this proposal mine because, although somewhat similar to the Clark Fork Coalition Plan, it is much broader in scope and application. I propose that everyone not only CAN clean up this and similar messes but make money doing so.

My proposal was written in the form of a speech which circumstances prevented the delivery at the proper time and place, (although there doesn't seem to be any "complete" body of those concerned to which it could be given.) This speech is separate from this letter for both points of view need to be realized. I hope that it will be accepted not as criticism necessarily but rather as a possible stepping-stone towards a truly permanent solution.

Judith Carnes 409 Cedar Street Anaconda, Montana 59711

Judith Carnes

Environmental Clean-Up: What Are We Talking About?

The last hundred years in America were spent mining and manufacturing minerals with little thought of hazardous by products being produced by those practices.

Today we have become more aware of the potential dangers to ourselves and our environment which hazardous substances can pose.

The next hundred years in America are likely to be spent cleaning up hazardous waste from past, present, and future mining enterprises.

It seems to me that the Federal, State and Local Governments - as well as the Corporations who have inherited these problems and the Agencies involved in over-seeing the work-have all failed to see the inherent possibilities that clean-up efforts in this magnitude might present. Each seems to have entered the fray with reluctance and an axe to grind so that any real co-operation has been forced and unproductive.

At best, the EPA is only viewing safe disposal solutions. ARCO is looking at possibly salvaging something by reprocessing some minerals out of the old tailings. Anaconda, Montana is being pressured into becoming a waste repository on the grounds that this one might have some safety features. Nobody really wins.

Eventually, the Federal Government will be forced to find safer disposal methods. Eventually, ARCO will run out of money to fund the clean-up even if they can somewhat offset the cost by reclaimation. Eventually, Anaconda's repository will be full but still highly hazardous. For all concerned, the present course of action is only a poor compromise measure to generate visable activity and when taken will have minimum long-term benefits for everybody.

The EPA, the Federal Government, and the State of Montana are, at some point in time, going to have to fund a pilot program which can perfect technology to sucessfully process contaminated soils and make them safe for re-use. WHY NOT NOW AND WHY NOT HERE?

The ARCO Corporation is not the "Bad Guy" in this scenerio. Whatever damages were done in the past were not in their power to avoid. They are not being given enough credit for their decision to accept the responsibility for previous actions this far in advance of owning the Anaconda Company operation. It is only natural for them to wish to spend as little as they can to remedy the problems. They should also stand to make some kind of profit for their huge outlay of capital.

Anaconda, Montana has had enough problems already from this contaminated waste and deserves a better solution than just having it buried someplace else in their vicinity.

There is a sensible solution which has been so far overlooked. One which, in my opinion, would solve the problem permanently while creating new opportunities for everyone and a chance to turn this to an advantage rather than a disadvantage.

Why not use every bit of available technology to build in Anaconda, Montana a series of extraction plants capable of removing all hazardous waste residue from contaminated soils? Within this complex a combination research and development center could get hands-on experience working with contaminated soils all over Montana. ARCO is a logical partner in this enterprise for they have or have access to the latest technology and are experienced in refining methods on a commercial scale. Within commuting distance is the most prestigious university in the U.S. dealing with Mining and Mineral Studies.

ARCO owns enough of this contaminated land in Anaconda on which a large operation such as this could be built. If, for some reason, the operation was not a success - we have lived with these potentially dangerous substances in our midst long enough that we would not be unduly frightened of their possible risks. Anaconda needs a new industry worse than other areas where this facility might be located and we have many services in place which would only need updating and remodeling to meet the added prosperity. We have a rail-link which was built primarily for transportation of these materials in ore form and hasn't forgotten

how to handle them either. We have a surplus of available housing that only needs some T.L.C. to bring it back into livibility. We have in place the social services for a much larger population which are costing those who remain in Anaconda a disproportionate amount of money to continue. In short, Anaconda would be the ideal place for this enterprise.

This type of a solution would be of mutual benefit for all concerned as really finding a way to actually get rid of the contaminates without depleting the soil reserves is the only logical remedy.

We transport hazardous chemicals in their pure form from one end of the nation to another daily. The transportation of these contaminated soils has not the same degree of danger to the environment or to the health of the population for these contaminates are present in more HIGHLY diluted form.

We can't afford to have large areas of our nation devoted to waste repositories nor can we afford the potential health and safety risks involved in their use both now and in the future. The only true solution is to remove the contaminates from the soil itself immediately upon discovery and by a permanent method.

Choosing to be a part of a permanent solution would have mutual benefit for all concerned here as well as for all Montanans, Americans, and ultimately men of all nations for this is not an isolated incidence.

Benefits gained would be widespread and long term. The Nation's tax money would be invested in learning how to handle this contamination problem permanently and safely. The ARCO Corporation would be branching out into a business with future potential where their particular processing expertise is not only needed but desired. The city of Anaconda would gain jobs, new economic growth and an industry to replace the Anaconda Company.

And last, but certainly not least, Montana's land and water resources would benefit from being cleaned up and replaced - and a chance to remain free of hazardous waste and pollution in the future. From my viewpoint, that is everything

a good solution should provide - benefits for everyone now and for years to come.

Thank you.

Judith Carnes 409 Cedar Street Anaconda, Montana 59711